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ABSTRACT

A total of 94 teachers and administrators from 12 health related occupations attended four 2-day workshops held in Chicago, DeKalb, Springfield, and Carbondale, Illinois, which were designed to provide inservice allied health teaching personnel with information, instruction, and assistance in developing behaviorally-oriented learning materials for use in the classroom and laboratory situation. Workshop activities included analyzing selected health-related occupations, planning and writing behavioral objectives, preparing learning experiences from behavioral objectives, and modifying non-behavioral learning materials to behaviorally-oriented learning materials. Qualitative evaluation techniques were used to evaluate the performance of the workshop participants, and analysis revealed that the majority equalled or exceeded the level of acceptable performance. The general concensus of workshop staff and participants was that the objectives had been attained and that future activities should be planned. The participants expressed a need for further assistance in developing behaviorally-oriented courses of study and receiving guided assistance in implementing behavioral course materials. Several workshop materials are appended. (SB)

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A Workshop Sponsored by the Division of Vocational and Technical Education
and Southern Illinois University for All In-Service
Allied Health Teachers in the State of Illinois

FINAL REPORT

A Workshop for Allied Health Teaching Personnel in Developing Behaviorally-Oriented Learning Materials

Project Number 13-07-09

Workshop Director
Dr. Richard F. Bortz

Project Funding Agency
Illinois Board of Vocational Education and Rehabilitation
Division of Vocational and Technical Education

August 8, 1970 to June 30, 1971

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I. INTRODUCTION

Increased social need, technological advance and greater emphasis on specialization in all areas of work have served as catalytic agents to increase demands for more work-oriented curriculums and programs of study. Paralleling this increase, career opportunities for people who can demonstrate competence in a given occupation and who would like to teach that occupation to others, find a ready market for their skills in post-secondary vocational and technical institutions.

In the State of Illinois, the minimum requirements demanded by the Illinois Board of Vocational Education and Rehabilitation of persons wishing to teach in an occupational program are: 1) the person can verify one year of work experience in the area in which he will teach and, 2) receive approval of the local school authority. The conditions for employment serve a two-fold purpose: First, they allow local school districts to add people to their faculties whose experience outside of the classroom will have value to the students. Second, they encourage people from occupations other than teaching to offer their skills and work experience to youth who are interested in learning that occupation.

The basic premise on which the above conditions are founded is that a person who has worked in an occupation is better qualified to teach that occupation than one who has not been afforded the experience. However, a second fact arises which also must be recognized. The person who accepts a

teaching position also accepts the responsibilities of being able to identify, select, organize, prepare, manage and evaluate the learning experiences of his charges. In the majority of cases, these are not realistic expectations for people who have had no experience in instructional technique or procedure.

Constant efforts are being made to alleviate the problem. Courses are offered on university and college campuses across the state to assist people in upgrading their instructional techniques. Similar activities sponsored by the same agencies are provided in extension courses in communities far removed from the central campus. State governmental agencies are also committed to the cause. Although not directly responsible for offering courses, such governmental agencies as the Division of Vocational and Technical Education do sponsor activities in the form of seminars, consulting services, liason services and workshops. By offering these activities, they hope to insure the professional growth of teachers and school administrators in Illinois.

This workshop, developed specifically for in-service allied health teaching personnel, was the product of the initial efforts of individuals from the Professional and Curriculum Development Unit, Division of Vocational and Technical Education and the Faculty of Technical and Industrial Education, School of Technology, Southern Illinois University. Individuals from both groups were acutely aware of the rapid rise in number of public and private allied health occupations programs in Illinois. They also recognized the fact that many of the people employed as teachers in these programs represented professions other than the teaching profession and would welcome any assistance in meeting their newly-acquired responsibilities. With this knowledge, the purpose of the workshop was formulated.

Statement of Purpose

The purpose of the Allied Health Workshop was to provide in-service allied health teaching personnel with information, instruction, and assistance in developing behaviorally-oriented learning materials for use in the classroom and laboratory situation.

II. BACKGROUND INFORMATION

Aims and Objectives of the Workshop

The aims of the workshop were to assist the workshop participants to 1) understand the process of identifying, organizing, implementing and evaluating activities and information topics for allied health programs of study, 2) realize the importance of such a process when developing occupational curriculum, programs of study, courses, units of study and lessons, and 3) develop behaviorally-oriented learning materials utilizing the principles of the above processes.

The objectives of the workshop included the following:

A. The Analyze a Health-Related Occupation.

B. To Plan and Write Behavioral Objectives.

C. To Prepare Learning Experiences From Behavioral Objectives.

D. To Modify Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials.

Complete forms of the objectives are shown in Appendices A through D, pages 26 through 29.

Workshop Staff

The Allied Health Workshop was conducted by Dr. Richard F. Bortz, Faculty of Technical and Industrial Education, School of Technology, Southern Illinois University, Carbondale and Dr. David Miles, Educational Research Bureau, Southern Illinois University, Carbondale. Dr. Bortz served as director of the project.

Supporting staff included Mr. Robert Kolkmeyer, Graduate Assistant, Technical and Industrial Education, School of Technology, and Miss Jeannine Hinkle, secretary employed on the project.

Description of Participants

Announcement of the workshop and invitations to attend were made in person, via the mails or by telephone. (Appendices E & F show copies of the letters sent to the participants). Brochures were distributed from the project director's office to known allied health programs in the state (Appendices G and H, pages 32 and 40 respectively). However, since the list was not complete, Miss Louise Dailey, Head Consultant of Health Occupations, Occupational Consultant Unit, Division of Vocational and Technical Education, and Mrs. Shirley Oshel, Assistant to Miss Dailey, were instrumental in notifying the remaining schools and programs which heretofore had not received the information of the coming workshops.

In-service teaching personnel from both public and private institutions were invited to attend.

A total of ninety-four participants attended the four workshops. Appendix I, pages 41 - 47 , lists the names of the people present at

each workshop. Only in a few instances were individuals not in attendance both days. Table I shows the occupational teaching areas of the workshop participants.

TABLE I

Occupational Teaching Areas of
Workshop Participants

Chicago Area Workshop		No. of Participants
Teacher (Instructor)		10
	Licensed Practical Nursing (6)	
	Registered Nursing (3)	
	Health Occupations (1)	
Administrator		9
	Director (1)	
	Coordinators and Assistant Coordinators (7)	
	Administrative Assistant (1)	
	Subtotal	19
DeKalb Area Workshop		
Teacher (Instructor)		12
	Licensed Practical Nursing (9)	
	Registered Nursing (1)	
	Health Occupations (1)	
	Dental Hygiene (1)	
Administrator		3
	Coordinators and Assistant Coordinators (2)	
	Chairman (1)	
Other		1
	Teacher-Coordinator Health Occupations (1)	
	Subtotal	16

TABLE I (cont'd)

Occupational Teaching Areas of
Workshop Participants

Springfield Area Workshop

Teacher (Instructor)		27
	Licensed Practical Nursing (14)	
	Registered Nursing (7)	
	Dental Hygiene (1)	
	Operating Room Technician (1)	
	Community Health Service (1)	
	Physical Therapy (1)	
	Health Occupations (1)	
	Dental Assisting (1)	
Administrator		7
	Coordinator and Assistant Coordinators (2)	
	Directors (3)	
	Supervisors (1)	
	Dean (1)	
	Subtotal	34

Carbondale Area Workshop

Teacher (Instructor)		18
	Licensed Practical Nursing (14)	
	Funeral Service (1)	
	In-service (1)	
	Inhalation Therapy (2)	
Administrator		6
	Coordinators and Assistant Coordinators (4)	
	Chairman (1)	
	Assistant Director (1)	
Other		1
	Student (1)	
	Subtotal	25
Total Number of Workshop Participants		94

Examination of Table I reveals that the great majority (seventy-two percent) of the total number of workshop participants were teachers. Twenty-six percent served in administrative capacities. One person (one percent) served both as an instructor and occupational coordinator. The one remaining individual (one percent) was an ex-dental hygienist. She presently is a student working toward a Master of Science degree in occupational education.

All participants, with the exception of the student, were employed in post-secondary institutions. All were directly or indirectly involved in allied health programs of study.

III. PROCEEDINGS

Schedule of Events

Four separate Allied Health workshops were conducted. Each workshop followed the same agenda. The dates and location of the workshops were as follows:

Chicago Area Workshop

Dates: October 7 and 8, 1970
Location: Chicago State College
West Campus
Chicago, Illinois

DeKalb Area Workshop

Dates: November 12 and 13, 1970
Location: Northern Illinois University
Montgomery Hall
DeKalb, Illinois

Springfield Area Workshop

Dates: December 1 and 2, 1970
Location: Holiday Inn South
Springfield, Illinois

Carbondale Area Workshop

Dates: January 6 and 7, 1971
Location: Southern Illinois University
University Student Center
Carbondale, Illinois

As was mentioned above, the agenda was the same for each of the four workshops. The agenda was as follows:

First Day	Activities	Speaker
8:00 - 8:30 a.m.	Introduction and Orientation	Bortz
8:30 - 10:15 a.m.	Anasynthesis of the Occupation	Bortz
10:15 - 10:30 a.m.	Coffee	
10:30 - 12 noon	Converting Occupational Activities into Learning Activities Packages	Bortz
12 noon - 1:00 p.m.	Lunch	
1:00 - 2:45 p.m.	Defining and Identifying Purpose, Aims, and Behavioral Objectives	Miles
2:45 - 3:00 p.m.	Coffee	
3:00 - 4:30 p.m.	Constructing Behavioral Objectives	Miles

Second Day	Activities	Speaker
8:30 - 10:15 a.m.	Developing Health-Related Occupational Programs of Study from Occupational Analyses	Bortz

Second Day	Activities	Speaker
10:15 - 10:30 a.m.	Coffee	
10:30 - 12 noon	Developing Behaviorally-Oriented Units of Study for Allied Health Occupations	Bortz
12 noon - 1:00 p.m.	Lunch	
1:00 - 2:45 p.m.	Planning for Behaviorally-Oriented Learning Materials	Miles
2:45 - 3:00 p.m.	Coffee	
3:00 - 4:30 p.m.	Modifying Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials	Bortz and Miles

Study and Reference Materials

Packets of printed materials were developed and distributed to the participants at the beginning of each workshop. The majority of packet entrees served as supportive study and reference materials for the workshop activities. The remaining entrees served as personal and professional information gathering instruments.

Copies of the handouts received by each participant are located in Appendices P through BB of this report.

IV. OUTCOMES

Purpose of the Evaluation

Evaluation of the individual Allied Health Workshops was made by members of the workshop staff. The purpose of the evaluation was two-fold:

(1) to determine if the individual participants achieved the objectives of the workshop (Appendices A through D, pages 26 through 29) and (2) to determine the degree to which the workshop activities assisted them in attainment of these goals.

The original plans for evaluation consisted of a pre-test, post-test evaluation technique. The pre-test was to be introduced at the beginning of each learning unit. A post-test was administered immediately following the activities of that unit. The pattern was followed for each of the three learning units of the workshop. At the close of the workshop, the participants were also invited to complete a Participant Opinionnaire to determine their feeling regarding the conduct of the workshop.

The results of the evaluation of the workshops are presented in the "Findings and Interpretation of the Data" portion of this section of the report. Statements concerning the evaluation of the workshop participants regarding the attainment of the workshop objectives, plus a report of their opinions as measured by the opinionnaire, are also included.

Instrumentation

Pre-test, post-test evaluation instruments were developed to measure the effectiveness of the instructional phases of each of the learning units presented during the workshop. The pre-test was used to determine the participants' level of ability (with regard to the given objective) prior to receiving instruction. In contrast, the post-test sought to measure any changes in performance following instruction. The pre-test and post-test instruments developed for each learning unit objective are shown in Appendices T and Y, pages 95 and 119 respectively.

The "Participant Opinionnaire"* was developed to identify the opinions of each participant regarding the four operational phases of the workshop. The four phases were: (1) Scheduling and Organization, (2) Content and Presentation, (3) Environment and Facilities, and (4) Satisfactions. Provision was also made in the opinionnaire for additional comments by the participants. A copy of the instrument is shown in Appendix J, pages 48 through 52.

Observations

Unlike many of the other occupational groups, people serving in the health related occupations seek a common goal; to assist the sick or injured patient to return to a normal, healthy way of life. This single goal permeates all allied health occupations. However, in an occupational area in which new occupations appear hand in hand with the evolution of technology, where people holding traditional titles are expected to perform duties once foreign to that occupation, and where responsibilities once relegated solely to one occupation are, with equal conviction, now assigned to several, the need for preparatory and in-service health related occupational education abounds.

At the conclusion of the workshop, the subjective evaluation of the Allied Health workshop staff and the workshop participants alike, was that the time and effort invested by each individual was well spent. The topics proved challenging, discussion was sought and encouraged, ample time was allotted for discussion of individual topics and lastly, the instruction offered in the two-day period had immediate value.

*Modification of the instrument developed by Bailey, Health Occupations Educaiton Institute, University of Iowa, 1969.

Findings and Interpretation of the Data

As was stated earlier, the original plan for evaluating the workshop participants consisted of pre-test, post-test evaluation of their performance with regard to each of the workshop objectives. However, due to semantic difficulties, the original plan was, in part, abandoned. The pre-test portion of the implementation sequence of the first and third workshop objectives was dropped. The implementation procedures for the second and fourth objectives continued, however, as planned. The fourth objective required no formal evaluation scheme, in that the purpose of the activities cited in the objective was "to allow each participant opportunity to develop behaviorally-oriented learning materials under supervised practice conditions", and depended on future outside effort to meet the success criteria.

Evaluation of the Workshop Objectives

Qualitative evaluation techniques were employed in evaluating the performance of the workshop participants. Pre-test evaluation of the first objective, "To Analyze a Health Related Occupation", was omitted, as mentioned earlier, because of the semantic difficulties encountered during the Chicago workshop. However, post-test evaluation revealed that the great majority of participants equalled or exceeded the evaluation criteria as stated in the objective.

The second objective required each participant "To Plan and Write Behavioral Objectives". During the Chicago area workshop no pre-instruction evaluation was made. However, in each of the three succeeding workshops, the pre-test, post-test sequence was employed. In the latter workshops,

approximately three-fourths of the participants wrote objectives which did not contain the four components typically required of behavioral objectives. After instruction, however, nearly all of the participants wrote behavioral objectives which contained the four components. Since only post-instruction performance was observed in the first workshop, the success of the instruction could not be confirmed. However, it seems reasonable to assume that the pre-instruction performance of the last three groups was representative of what would have been found with the first group. Thus, the instructors feel safe in concluding that the majority of participants learned to write behavioral objectives in the workshops.

The third objective directed the participants "To Prepare Learning Experiences From Behavioral Objectives". With the experience and knowledge gained from attainment of the preceeding workshop objectives, all of the participants successfully completed one, and in many cases, two "learning experiences". The "learning experiences" appeared in the form of a "Unit Learning Module". (Appendix Y, page 119).

In one respect, attainment of the fourth objective could not be realized during the workshop. The objective, "To Modify Non-Behavioral Teaching Materials To Behaviorally-Oriented Learning Materials", was open-ended in that it offered participants only a brief period of supervised time to begin the process, and depended on future work to realize final achievement. Successful attainment on behalf of the participants can only be surmised. If the participants follow through in a manner demonstrated in the workshop, the great majority will achieve the goal.

Evaluation of the Participant Opinionnaire

Analysis and interpretation of the responses, as taken from the "Participant Opinionnaire", are presented in Table II. The data presented in Table II are totals of the responses taken from the four Allied Health Workshops. Analysis of participant responses made at the individual workshops are presented in Apendices K, L, M and N, pages 53 through 72 .

TABLE II

Analysis of Total Responses as Taken
From the Participant Opinionnaires

Scheduling and Organization

	SA	A	N	D	SD	NA
1. The amount of lead time (from when you first heard about the workshop until the first day it began) was sufficient.....	69	13	3	5	3	1
2. Sufficient time was allotted for the discussion of individual topics presented during the workshop.....	51	30	3	10		
3. The topics could have been discussed more thoroughly in small group discussion sessions.....	15	25	7	28	16	3
4. Two days was sufficient time to cover the information presented in the workshop.....	19	39	7	21	6	2
5. Topics were scheduled in an appropriate sequence.....	44	46	3			1
6. The workshop staff was inaccessible or unapproachable for individual attention.....	3	2		10	79	

TABLE II (cont'd)

Analysis of Total Responses as Taken
From the Participant Opinionnaires

		SA	A	N	D	SD	NA
7.	A greater proportion of time should have been spent in panel discussion.....	2	5	16	34	37	
8.	The schedule was too fixed.....	1	3	7	40	43	
9.	In general, the workshop was well organized.....	62	31				1
	Content and Presentation						
10.	Individual presentations were too long.....	1	5	5	38	45	
11.	The individual speakers dominated the presentations and offered little opportunity for audience participation..			2	25	67	
12.	The presentations were stimulating and interesting.....	60	31	2			1
13.	The discussions were lead in an effective manner.....	60	32	1	1		
14.	The presenters were well organized.....	61	32		1		
15.	I was stimulated to think objectively about the topics presented.....	64	29				1
16.	I expect to be able to apply the content which was presented in the workshop.....	44	41	9			
17.	Too much jargon was used by the presenters.....	1	4	9	38	41	1
18.	Too much emphasis was placed on topics that are unimportant.....	2	3	5	39	45	
19.	The presentation of the content material was paced too fast.....	2	4	14	40	32	2

TABLE II (cont'd)

Analysis of Total Responses as Taken
From the Participant Opinionnaires

		SA	A	N	D	SD	NA
20.	I am pleased with the teaching techniques used for the workshop.....	47	42	5			
21.	Sufficient time was devoted to the topic of the anasynthesis of Allied Health occupations into learning activities packages.....	20	54	9	11		
22.	More time should be devoted to the topic of preparing learning experiences from behavioral objectives.....	15	44	13	17	2	3
23.	Insufficient time was allowed for the planning and writing of behavioral objectives for Allied Health occupations.....	4	17	12	41	19	1
24.	Less time should be devoted to the modification of non-behavioral learning materials to behaviorally-oriented learning materials.....	2	5	21	31	29	6
	Environment and Facilities						
25.	The meeting rooms were adequate and conducive to learning.....	26	45	4	16	1	2
26.	The materials distributed during the workshop were informative and worthwhile.....	52	39	2			1
27.	The overnight accomodations available to the workshop participants were adequate.....	31	12	28	2		21
28.	Food service was poor.....	4	3	17	28	35	7
29.	It is obvious that the establishment at which the workshop was held had good group accomodations.....	30	45	15	1		3

TABLE II (cont'd)

Analysis of Total Responses as Taken
From the Participant Opinionnaires

	SA	A	N	D	SD	NA
30. The location of this workshop was desirable, based upon its proximity to the major population center in this region of the state.....	41	35	15	2		1
31. The number of participants involved in the workshop was too large to adequately present and discuss the information topics.....	2	5	6	41	36	4

Satisfactions

32. I would recommend to others that they participate in an Allied Health workshop of this type.....	72	20			1	1
33. I anticipate maintaining some type of contact with the Allied Health workshop staff.....	39	28	23	3		1
34. The Allied Health workshop staff should feel that it has accomplished the objectives of this workshop.....	61	29	2	1		1
35. The Allied Health workshop staff did not relate theory to practice.....	1	2	2	33	52	4
36. I did not think that I would learn as much as I did in this workshop.....	23	33	22	9	4	3
37. New concepts and ideas were discussed which have a great deal of merit.....	46	37	8	2		1
38. I can see no advantage to this type of short-term workshop when compared to other types of teacher education programs.....	1	1	3	26	62	1
39. Attendance at a workshop in which greater emphasis would be given the anasynthesis of Allied Health occupations into learning activities packages would be valuable.....	29	43	16	5		1

TABLE II (cont'd)

Analysis of Total Responses as Taken
From the Participant Opinionnaires

		SA	A	N	D	SD	NA
40.	I was impressed with the interest of my fellow participants in the Allied Health workshop.....	35	49	7		1	2
41.	Attendance at a workshop in which greater emphasis would be given the modification of non-behavioral learning materials would be beneficial.....	27	39	18	5	2	3
42.	Information of the type offered in this workshop would have relatively little value for administrators of Allied Health teaching personnel.....	2	2	8	26	52	4
43.	Attendance at a workshop in which greater emphasis would be given the preparing of learning experiences from behavioral objectives would be beneficial.....	31	53	4	2		4
44.	A workshop which deals with implementing behaviorally-oriented learning materials in the classroom situation would be valuable.....	44	42	5	1		2
45.	Attendance at a workshop in which greater emphasis would be given the planning and writing of behavioral objectives for Allied Health occupations would be beneficial.....	27	41	14	6	2	4

46. Additional comments: (Use back of page if desired)

A total of forty-five statements, representing four major categories, e.g. Scheduling and Organization, Content and Presentation, Environment and Facilities and Satisfactions were used to acquire the data. One of five responses could be selected per item on the opinionnaire. The participant could strongly agree with the statement (SA), agree but not so strongly (A), assume a neutral or undecided position (N), disagree with the statement but not in an extreme manner (D), or strongly disagree with the statement (SD).

Examination of items one through nine of the Scheduling and Organization section of the opinionnaire reveals an overall positive group attitude toward this phase of the workshop. However, items three and four reveal somewhat less participant satisfaction with the organizational aspects of the workshop. Item three concerns the staff-participant ratio of the lecture-discussion type setting. The matter received attention during the planning phase of the workshop. It was decided that rather than divide the group of participants into sub-groups, a limit of thirty participants (a normal class size) would be placed on the enrollment. The purpose was two-fold; to maximize the effect of instruction and to allow the members of the group opportunity to share the experiences, opinions and comments of their fellow participants.

The majority of responses made to item four indicated participant satisfaction regarding the relationship of instruction time to amount of material covered. However, a relatively large portion of the group felt that the amount of time allotted to satisfactorily achieve the objectives of the workshop was insufficient. Examination of the participants' responses to items twenty-one through twenty-four of the Content and Presentation portion of the opinionnaire supports the feelings of the latter group.

In sum, if similar workshops are conducted in the future, a re-evaluation of the grouping of participants in the classroom and the time/achievement ratio would be in order.

The Content and Presentation portion of the workshop was ranked excellent. One possible exception was noted. Examination of the distribution of responses to item nineteen revealed a subtle support of the statement ". . .presentation . . .paced too fast". Due to the admittedly large amounts of instructional material covered in the two-day period, the possibility of a group of

participants demonstrating dissatisfaction with the rate of instruction was expected. The subtle reactions to this statement add further support to the aforementioned discussion of items twenty-one through twenty-four.

The Environment and Facilities aspects of the workshop (e.g. physical surroundings, facilities and personal accommodations) received mixed response. The relevancy of the materials selected for the workshops and the relationship of the size of the group to degree of participant involvement, items twenty-five and thirty-one respectively, received majority support. However, the numbers of responses to statements regarding the conduciveness of the meeting rooms to learning, food service, group accomodations and geographical location of the workshops were more widely distributed. This was unexpected, since a principal factor in the selection of sites for the workshops was the availability of pleasant learning and living conditions.

Responses to items thirty-two through forty-five of the Satisfactions portion of the opinionnaire were similar to the above category in that the statements also received decidedly mixed responses. The great majority of participants felt that the objectives of the workshop had definitely been achieved. Fewer persons, however, expressed a desire to continue a professional relationship with the workshop staff nor did they feel that they had benefited as much as they might have from the workshop.

Attendance at future workshops in which an in-depth approach would be directed at any one of the four objectives of this workshop also met with mixed support. In each case, the majority of participants recognized the value of the special-empahsis workshops. However, workshops designed to

assist the individuals in 1) preparing classroom and laboratory learning experiences to insure the desired terminal behavior and 2) implementing behaviorally-oriented learning materials in the classroom received the greatest interest.

The majority of participants supported the continued conduct of short-term workshops. They also felt that both teachers and administrators could benefit from the experience.

Although no attempt was made to evaluate or categorize the additional comments made by the workshop participants (opinionnaire item number forty-six), the statements have been recorded and are presented in Appendix O, pages 73 - 76.

V. SUMMARY AND RECOMMENDATIONS

Summary of the Workshop

Four workshops, serving persons from twelve health related occupational areas, were conducted during the Fall and Winter academic quarters, 1970-71. The places and dates of the workshops were: Chicago State College, West Campus, Chicago, Illinois, October 7 and 8, 1970; Northern Illinois University, DeKalb, Illinois, November 12 and 13, 1970, Holiday Inn South, Springfield, Illinois, December 1 and 2, 1970; and Southern Illinois University, Carbondale, Illinois, January 6 and 7, 1971. The agenda for each workshop was the same. A total of ninety-four participants attended the four workshops. The purpose of the workshops was "to provide in-service allied health teaching personnel with information, instruction, and assistance in developing behaviorally-

oriented learning materials for use in the classroom and laboratory situation".

Tha aims of the workshops were to assist the workshop participants to 1) understand the process of identifying, organizing, implementing and evaluating activities and information topics for allied health programs of study, 2) realize the importance of such a process when developing occupational curriculum, programs of study, courses, units of study and lessons and 3) develop behaviorally-oriented learning materials utilizing the principles of the above processes.

The objectives of the workshop were:

1) Title: To Analyze a Health-Related Occupation
Performance Conditions: In a classroom, given the "Occupational Analysis Sheet" (Brief Form), the necessary class notes, together with work experience in the health occupation to be analyzed,
Terminal Behavior: The workshop participant will analyze the selected health-related occupation into its behavioral categories of activity.
Evaluation Criteria: The completed occupational analysis will include the: 1) title of the occupation, 2) representative list of tasks, 3) list of performance steps and technical information topics for a selected task and 4) list of performance step details for a selected performance step of the selected task.

2) Title: To Plan and Write Behavioral Objectives
Performance Conditions: In the classroom, given a selected list of tasks from the above occupational analysis, and the necessary class notes,
Terminal Behavior: The workshop participant will write a complete behavioral objective for each task selected.
Evaluation Criteria: Each behavioral objective will include the: 1) title of the objective, 2) statement of performance conditions, 3) statement of terminal behavior and 4) statements of criteria used to evaluate the student's performance of the stated task.

3) Title: To Prepare Learning Experiences From Behavioral Objectives.
Performance Conditions: In the classroom, given the above list of behavioral objectives for each of the selected tasks, and the necessary class notes.
Terminal Behavior: The workshop participant will prepare a series of learning experiences (unit learning modules).
Evaluation Criteria: Each learning experience will include the: 1) number of the unit learning module, 2) unit of study number and title, 3) learning objective, 4) type of performance, 5) estimated time and 6) list of learning activities and resources.

4) Title: To Modify Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials.
Performance Conditions: Given the non-behavioral learning materials (e.g. courses of study, course outline, syllabus, notes, etc.) that the participant currently uses in the classroom and/or laboratory situation.
Terminal Behavior: The workshop participant will change the non-behavioral learning materials to behaviorally-oriented learning materials.
Evaluation Criteria: The performance of the workshop participant will be considered satisfactory if she/he demonstrates the ability to successfully change some portion of his/her non-behavioral learning materials to behaviorally-oriented learning material.

Qualitative evaluation techniques were used to evaluate the performance of the workshop participants. The majority of participants equalled or exceeded the level of acceptable performance as is stated in each of the four objectives.

Quantitative analysis was made of the responses as taken from the Scheduling and Organization, Content and Presentation, Environment and Facilities, and Satisfactions portions of the "Participant Opinionnaire". Examination of the analysis and review of the data revealed an overall favorable response to the many aspects of the workshop. However, the analysis also revealed areas of mixed response. The areas of the workshop which received mixed participant support were the organizational grouping of participants, the time/achievement ratio, and the conduciveness of facilities. Less interest was also noted in the conduct of future workshops in the areas of occupational analysis and the planning and writing of behavioral objectives.

Comments on Instruction and Evaluation

Several aspects of the workshop merit comment. First, the pre-test, post-test evaluation technique, while desirable in many learning situations,

is noticeably less effective in a learning situation which demands a prior knowledge of precisely defined terms. To expect satisfactory perfomance of people who do not have the required knowledge, proves futile. To evaluate performance after the terms have been defined voids the basic assumption of pre-testing.

Second, the four objectives of the workshop individually might serve as goals for an equal or greater number of university level courses. To expect comparable performance from persons' whose exposure to the learning processes associated with these objectives is fractional, when compared to that of the typical college student, is also an exercise in futility.

Third, the portion of time spent on preparing the participants to achieve the purpose of the workshop far exceeded the amount of time spent on actually modifying non-behavioral teaching materials to behaviorally-oriented learning materials. This was an unfortunate but necessary circumstance. The participants had to acquire the necessary behaviors, as defined in the first three objectives, before they could satisfactorily master the last objective of the workshop.

Fourth, no provision was made in the study to determine or identify the number of participants who satisfactorily achieved the last objective of the workshop. Since the major portion of the work required to meet this objective will be done after the close of the workshop, and since any effort to meet the stated goal as purely voluntary, achievement can only be surmized.

Recommendations

In summary, the general concensus of both the Allied Health Workshop participants and staff was that the objectives of the workshop had been

attained. Barring unforeseeable circumstances and shoring up the less potent phases of the workshop, similar activities should be made available in the future. There was an expressed need by the participants of the Allied Health workshops for futher assistance in developing behaviorally-oriented courses of study and receiving guided assistance in implementing behavioral course material in the classroom and laboratory environment. The participants also showed interest, although somewhat less, in future workshops in which an in-depth approach to the study of the anasynthesis of the occupation and planning and writing of behavioral objectives could be made.

The opportunities to up-grade the teaching of in-service occupational teachers in areas outside of allied health are too numerous to cite. However, teachers in many of the occupational programs that exist throughout the state today are in need of additional education and training. Opportunities made available to the Allied Health teaching personnel should also be made available to those people in other fields of occupational endeavor.

APPENDICES

APPENDIX A

UNIT LEARNING MODULE - #1

Course: # - Allied Health Workshop

Unit of Study: # 1 - Occupational Analysis

Learning Objective

Title: To Analyze a Health-Related Occupation

Performance Conditions: in the classroom, given an "Occupational Analysis Sheet" (Brief Form), the necessary instruction, together with work experience in the health occupation to be analyzed,

Terminal Behavior: The workshop participant will analyze the selected health-related occupation into its behavioral categories of activity.

Evaluation Criteria: The completed occupational analysis will include the: 1) title of the occupation, 2) representative list of tasks, 3) list of performance steps and technical information topics for a selected task and 4) list of performance step details for a selected performance step of the selected task.

Type of Performance
Disrm._____
Recall_____
Manip._____
Speech_____
Prb.Sol.XX
Est. Time
3 Hours

Learning Activities and Resources

Participants will:

1. Read pages 7-29, Developing Vocational Instruction, Mager and Beach.
2. Participate in illustrated presentation-discussion #1 - "Anasynthesis of an Occupation".
3. Participate in group discussion.
4. Practice performing an occupational analysis.
5. Complete an occupational analysis (using Brief Form).

Resources:

1. Occupational Analysis Sheet (Brief Form).
2. Developing Vocational Instruction, Mager and Beach.
3. Completed Occupational Analysis (Brief Form).
4. Occupational Analysis by Rupp and Johnson.

APPENDIX B

UNIT LEARNING MODULE - #2

Course: # - Allied Health Workshop

Unit of Study: # 2 - Planning and Writing Behavioral Objectives

Learning Objective

Title: To Plan and Write Behavioral Objectives

Performance Conditions: In the classroom, given a selected list of tasks from the above occupational analysis, and the necessary instruction,

Terminal Behavior: The workshop participant will write a compelte behavioral objective for each task selected.

Evaluation Criteria: Each behavioral objective will include the: 1) title of the objective, 2) statement of performance conditions, 3) statement of terminal behavior and 4) statements of criteria used to evaluate the student's performance of the stated task.

Type of Performance
Disrm._____
Recall_____
Manip._____
Speech_____
Prb.Sol.XX
Est. Time
3 Hours

Learning Activities and Resources

Participants will:

1. Read Preparing Instructional Objectives, Mager
2. Participate in illustrated presentation-discussion #2 - "Planning and Writing Behavioral Objectives".
3. Examine example objectives.
4. Write objectives.

Resources:

1. "Definition of a Behavioral Objective".
2. "Terminal Objective Sheet".

APPENDIX C

UNIT LEARNING MODULE - #3

Course: # - Allied Health Workshop

Unit of Study: # 3 - Preparing Learning Experiences

Learning Objective

Title: To Prepare Learning Experiences From Behavioral Objectives

Performance Conditions: In the classroom, given the above list of behavioral objectives for each of the selected tasks, and necessary instruction,

Terminal Behavior: The workshop participant will prepare a series of learning experiences (unit learning modules).

Evaluation Criteria: Each learning experience will include the: 1) number of the unit learning module, 2) unit of study number and title, 3) learning objective, 4) type of performance, 5) estimated time and 6) list of learning activities and resources.

Type of Performance
Disrm._____
Recall XX
Manip._____
Speech_____
Prb.Sol.____
Est. Time
3 Hours

Learning Activities and Resources

Participants will:

1. Read sample handouts of completed "Unit Learning Modules".
2. Participate in illustrated presentation-discussion # 3 - "The Unit Learning Module".
3. Practice constructing two unit learning modules.
4. Complete one or more unit learning modules.

Resources:

1. Occupational Analysis Sheet (Brief Form).
2. List of Behavioral Objectives
3. Unit Learning Modules (Blank Forms).
4. Unit Learning Modules (Completed samples).

APPENDIX D

UNIT LEARNING MODULE - #4

Course: # - Allied Health Workshop

Unit of Study: # 4 - Modification of Non-Behavioral Teaching Materials

Learning Objective

Title: To Modify Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials

Performance Conditions: Given the non-behavioral learning materials (e.g. courses of study, course outline, syllabus, notes, etc.) that the participant currently uses in the classroom and/or laboratory situation,

Terminal Behavior: The workshop participant will change the non-behavioral learning materials to behaviorally-oriented learning materials.

Evaluation Criteria: The performance of the workshop participant will be considered satisfactory if she/he demonstrates the ability to successfully change some portion of his/her non-behavioral learning materials to behaviorally-oriented learning material.

Type of Performance
Disrm.____
Recall XX
Manip.____
Speech____
Prb.Sol.____
Est. Time
Infinite

Learning Activities and Resources

Participants will:

1. Read pages 53-82, Developing Vocational Instruction, Mager and Beach.
2. Participate in illustrated presentation-discussion #4 - "Modification of Non-Behavioral Teaching Materials to Behaviorally-Oriented Learning Materials".
3. Begin to modify existing non-behavioral teaching materials.

Resources:

1. All handouts received to date
2. Courses of Study by Sandhaas and Hoppe.
3. Personal materials.

APPENDIX E

September 3, 1970

Dear Colleague:

Southern Illinois University, in conjunction with the Division of Vocational and Technical Education of the State of Illinois, is announcing four workshops for in-service allied health teachers. The purpose of the workshops is to provide these teachers with information, instruction and assistance in developing behaviorally-oriented learning materials for use in the classroom and laboratory situation.

Enclosed find a number of brochures which will provide you and your staff members with more information about the workshop. Four population centers have been selected as sites for the individual workshops. Since the enrollment of each workshop is limited to thirty participants, prompt response from interested persons is encouraged.

If any questions arise concerning the workshop, please notify me. I appreciate your kind attention to this matter and hope that members of your faculty will be able to attend.

Sincerely,

Richard F. Bortz

Richard F. Bortz
Project Director

RFB/jdh

Enclosures

APPENDIX F

September 30, 1970

Dear Participant:

Your application to attend the workshop for allied health in-service teaching personnel in the Chicago area has been received and accepted. As a reminder, the workshop will be held on Wednesday and Thursday, October 7 and 8, 1970, at the Chicago State College, West Campus, 500 N. Pulaski Ave., Chicago. The activities for the first day will begin at 8:00 a.m.

As stated in the brochure you received, the purpose of the workshop is to provide you with information, instruction and assistance in developing behaviorally-oriented learning materials for use in the classroom and laboratory situation. To insure that this goal is attained, will you please bring one complete set of materials that you presently use in teaching one course. This material will be used in the development of behaviorally-oriented lesson plans for that course.

Enclosed also find: 1) a memorandum identifying restaurants, hotels, motels, etc. in the area, 2) a business card of the workshop director and 3) a second workshop brochure. These items are designed to provide you with sources for answering any questions that might arise.

Welcome to the workshop! See you on October 7th.

Sincerely,

Richard F. Bortz

Richard F. Bortz
Workshop Director

RFB/jdh

Enclosures

APPENDIX G

ALLIED HEALTH WORKSHOP

Dr. Richard F. Bortz
School of Technology
Southern Illinois University
Carbondale, Illinois 62901

Activities	First Day
Introduction and Orientation	8:00–8:30 a.m.
Anasynthesis of the Occupation	8:30–10:15 a.m.
Coffee	10:15–10:30 a.m.
Converting Occupational Activities into Learning Activities Packages	10:30–12:00 noon
Lunch	12:00 noon–1:00 p.m.
Defining and Identifying Purpose, Aims, and Behavioral Objectives	1:00–2:45 p.m.
Coffee	2:45–3:00 p.m.
Constructing Behavioral Objectives	3:00–4:30 p.m.
	Second Day
Developing Health-Related Occupational Programs of Study from Occupational Analyses	8:30–10:15 a.m.
Coffee	10:15–10:30 a.m.
Developing Behaviorally-Oriented Units of Study for Allied Health Occup.	10:30–12:00 noon
Lunch	12:00 noon–1:00 p.m.
Planning for Behaviorally-Oriented Learning Materials	1:00–2:45 p.m.
Coffee	2:45–3:00 p.m.
Modifying Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials	3:00–4:30 p.m.

SPONSORED BY:
SOUTHERN ILLINOIS UNIVERSITY
and
STATE OF ILLINOIS
DIVISION OF
VOCATIONAL AND TECHNICAL
EDUCATION

ANNOUNCING...

WORKSHOPS

FOR

ALLIED HEALTH TEACHING PERSONNEL
IN DEVELOPING
BEHAVIORALLY--ORIENTED LEARNING
MATERIALS

Sponsored By:
SOUTHERN ILLINOIS UNIVERSITY
and
State of Illinois
DIVISION OF
VOCATIONAL and TECHNICAL EDUCATION

A WORKSHOP FOR ALLIED HEALTH TEACHING PERSONNEL IN DEVELOPING BEHAVIORALLY–ORIENTED LEARNING MATERIALS

DATES:

Chicago – October 7 & 8, 1970
DeKalb – November 12 & 13, 1970
Springfield – December 1 & 2, 1970
Carbondale – January 6 & 7, 1971

PLACES:

Chicago – Chicago State College
500 N. Pulaski Ave.
DeKalb – Montgomery Hall, NIU
Springfield – Holiday Inn South, Rt.66
Carbondale – School of Technology, SIU

PURPOSE:

To provide in-service allied health teaching personnel with information, instruction and assistance in developing behaviorally-oriented learning materials for use in the classroom and laboratory situation.

TOPICS:

1) The Anasynthesis of Allied Health Occupations Into Learning Activities Packages, 2) Planning and Writing Behavioral Objectives For Allied Health Occupations, 3) Preparing Learning Experiences From Behavioral Objectives and 4) Modification of Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials.

COSTS:

The workshop is provided as a service to in-service allied health teaching personnel in Illinois by Southern Illinois University and the Division of Vocational and Technical Education. The only costs incurred by the workshop participants are for their personal travel, food and lodging. Workshop materials will be furnished through the project.

REQUIRED MATERIALS:

The purpose of the workshop requires that each participant brings with her one complete set of materials that she uses in teaching one given course. These materials will be used to make a behaviorally-oriented course of study.

ENROLLMENT:

Enrollment is limited to the first 30 applicants. Application must be returned 10 days prior to the commencement of the selected workshop. Accepted applicants will be notified one week prior to the beginning of the workshop.

APPLICATION
ALLIED HEALTH WORKSHOP

Name _____
Last First Middle

Name of School _____ Job Title _____

School Address _____ _____
City Zip Telephone

Home Address _____
City Zip Telephone

Date _____ Signature _____

Location and Dates

Check One:

- ☐ Chicago–October 7 & 8, 1970
- ☐ DeKalb–November 12 & 13, 1970
- ☐ Springfield–December 1 & 2, 1970
- ☐ Carbondale--January 6 & 7, 1971

APPENDIX H

Mailing List For Allied Health Programs in Illinois

REGION I

Loop J. C. Dist. #508
180 N. Michigan
Chicago, Ill. 60601

Malcolm X College
2250 W. Van Buren St.
Chicago, Ill. 60612

Wright College
3400 North Austin Avenue
Chicago, Ill. 60634

Morton College
2500 S. Austin Blvd.
Cicero, Ill. 60650

Prairie State
P. O. Box 487
Chicago Heights, Ill. 60411

McHenry County College
6200 Northwest Highway
Crystal Lake, Ill. 60014

Elgin Community College
373 E. Chicago Street
Elgin, Ill. 60120

Kankakee Community College
Box 888, River Road
Kankakee, Ill. 60901

College of Lake County
19351 W. Washington Street
Grayslake, Ill. 60030

Bremen H. S. Dist. #228
15233 S. Crawford Ave.
Midlothian, Ill. 60445

Amundsen J. C.
4626 N. Knox Avenue
Chicago, Ill. 60630

Chicago Jr. College--Fenger Campus
11220 South Wallace
Chicago, Ill.

Thornton Community College
150th and Broadway
Harvey, Ill. 60426

Wm. Rainey Harper College
Algonquin and Roselle Roads
Palatine, Ill. 60067

Trition Junior College
2000 Fifth Avenue
River Grove, Ill. 60171

Moraine Valley Community College
10900 South 88th Avenue
Palos Hills, Ill. 60465

Joliet Jr. College
Route 3, Houbolt Ave.
Joliet, Ill. 60436

College of DuPage, Cook and Will Counties
22nd Street and Lambert Road
Glen Ellyn, Ill. 60137

Evanston Twp. H.S.
1600 Dodge Avenue
Evanston, Ill. 60204

Mt. Prospect Twp. H.S. Dist. #214
799 W. Kensington Road
Mt. Prospect, Ill. 60056

APPENDIX H (cont'd)

Mailing List For Allied Health

Programs in Illinois

Niles Twp. Community H.S. Dist. #219
Oakton Street & Edens Expressway
Skokie, Ill. 60076

Kaneland Comm. Unit School Dist. #302
Keslinger & Meredith Roads
Mapel Park, Ill. 60151

REGION II

Black Hawk College Dist. #503
6600 34th Avenue
Moline, Ill. 61265

Junior College Dist. #511 - Rock Valley
3301 N. Mulford Road
Rockford, Ill. 61101

Sterling Twp. High School
1608 Fourth Avenue
Sterling, Ill. 61081

LaSalle Area Vocational Center
541 Chartres St.
LaSalle, Ill. 61301

Sauk Valley College #506
Route 1
Dixon, Ill. 61021

Illinois Jr. College Dist. #519
511 W. Stephenson St.
Freeport, Ill. 61032

Junior College Dist. #519
R.R. 1
Oglesby, Ill. 61348

United Twp. High School #30
13th & 42nd Avenue
E. Moline, Ill. 61244

Illinois Junior College Dist. #523
Highway Alt. 30 at Malta Rd.
Malta, Ill. 60150

Rockford Public Schools
201 South Madison St.
Rockford, Ill. 61101

REGION III

Carl Sandburg College
South Lake Storey Road
P.O. Box 1407
Galesburg, Ill. 61401

Peoria Public School District #150
3202 N. Wisconsin Ave.
Peoria, Ill. 61603

Lincolnland Community College
3865 S. Sixth St.
Springfield, Ill. 62703

Illinois Central College
P.O. Box 2400
East Peoria, Ill. 61611

Pekin Area Vocational Center
Pekin, Ill. 61554

Springfield Public Schools Dist. #186
1900 W. Monroe
Springfield, Ill. 62704

APPENDIX H (cont'd)

Mailing List For Allied Health

Programs in Illinois

Havana High School Dist. #126
500 South McKinley St.
Havana, Ill. 62644

Macomb Unit Dist. #185
(West Central Ill. AVC)
1124 E. Adams Street
Macomb, Ill. 61455

Galesburg Community Unit Dist. #205
590 North Prairie Street
Galesburg, Ill. 61401

Quincy School Dist. #172
1444 Maine Street
Quincy, Ill. 62301

REGION IV

Bloomington Public School Dist. #87
504 Jefferson Street
Bloomington, Ill. 61701

Danville Junior College
2000 East Main
Danville, Ill. 61832

Minier Olympia Community Unit Dist. #16
P.O. Box 477
Minier, Ill. 61759

Lakeland College
1921 Richamond Avenue
Mattoon, Ill. 61938

Champaign Partland J.C. Dist. #505
2 Main Street
Champaign, Ill. 61820

Decatur Area Vocational Center
101 West Cerro Gordo Street
Decatur, Ill. 62523

Pontiac Twp. High School & AVC
1100 Indiana Avenue
Pontiac, Ill. 61764

REGION V

Alton Community Unit Dist. #11
2514 Merchant Street
Alton Ill.

Cahokia Unit #187
1700 Jerome Lane
Cahokia, Ill. 62206

East St. Louis School Dist. #189
240 North 6th Street
East St. Louis, Ill. 62201

Belleville Area College
225 West Blvd.
Belleville, Ill.

Chester Community Unit Dist. #139
1901 Swanwick Street
Chester, Ill. 62233

Lebanon Community High School
200 West Schultz Street
Lebanon, Ill. 62254

APPENDIX H (cont'd)

Mailing List For Allied Health

Programs in Illinois

REGION VI

Carmi Twp. High School
800 West Main Street
Carmi, Ill. 62821

Mt. Vernon Area Voc. Center
7th & Casey Avenue
Mt. Vernon, Ill. 62864

Egyptian C.U.D. #5
R.R. #1
Tams, Ill. 62988

Kaskaskia Junior College Dist. #401
Shattuc Road
Centralia, Ill. 62801

Southern Illinois University
Vocational-Technical Institute
Practical Nurse Program
Carbondale, Ill. 62901

Southern Ill. Jr. College Dist. #533
333 West College
Harrisburg, Ill. 62946

Illinois Eastern Junior College
900 West St. John Street
Olney, Ill. 62450

Wabash Valley College
School of Practical Nursing
2200 College Dr.
Mt. Carmel, Ill. 62863

Lawrenceville-Ambraw Valley Area Voc. Cente
8th & Charles St.
Lawrenceville, Ill. 62439

Salem Community High School Dist. #600
Route 37 North
Salem, Ill. 62881

Frankfort C.U.D. #168
512 East St. Louis
West Frankfort, Ill. 62896

John A. Logan College
Carterville, Ill. 62918

Rend Lake College
315 South Seventh Street
Mount Vernon, Ill. 62864

Shawnee Jr. College Dist. #531
Shawnee College Road
Ullin, Ill. 62992

Olney Central College
405 N. West Street
Olney, Ill. 62450

SCHOOLS OF PRACTICAL NURSING

F.W. Olin School of Practical Nursing
2512 Amelia St.
Alton, Ill. 62002

Bloomington School of Practical Nursing
709 So. Clinton
Bloomington, Ill. 61701

APPENDIX H (cont'd)

Mailing List For Allied Health

Programs in Illinois

Cairo School of Practical Nursing
1615 Commercial
Cairo, Ill. 62914

Champaign School of Practical Nursing
103 No. Prospect
Champaign, Ill. 61820

Chicago Public Schools
Practical Nursing Center
1820 W. Grenshaw
Chicago, Ill. 60612

Chicago Public Schools
LPN Program Manpower Div.
2913 N. Commonwealth
Chicago, Ill. 60657

Danville School of Practical Nursing
305 W. Madison
Danville, Ill. 61832

Decatur School of Practical Nursing
210 W. North St.
Decatur, Ill. 62526

E. St. Louis School of Practical Nrsg.
905 Ohio St.
E. St. Louis, Ill. 62201

Hinsdale Hospital Practical Nursing
120 N. Oak St.
Hinsdale, Ill.

Kankakee School of Practical Nursing
293 E. Court St.
Kankakee, Ill. 60901

Kishwaukee Community College
612 Haishah Street
DeKalb, Ill.

Oakton College, Practical Nursing
7900 Nagle
Morton Grove, Ill. 60053

Quincy School of Practical Nursing
820 Vermont
Quincy, Ill. 62301

St. Frances Cabrini Sch. of Prac. Nrsg.
811 So. Lytle St.
Chicago, Ill. 60607

St. Mary's Hospital School of Prac. Nrsg.
1015 O'Connor
LaSalle, Ill. 61301

Springfield School of Practical Nursing
1101 So. 15th St.
Springfield, Ill. 62704

Streator Twp. H.S., Practical Nrsg. Program
600 N. Jefferson
Streator, Ill. 61364

Spoon River
102 E. Elm
Canton, Ill. 61520

MISCELLANEOUS LISTINGS

Southern Illinois University
Mortuary Science
Vocational-Technical Institute
Carbondale, Ill. 62901

Southern Illinois University
Dental Lab Technology
Vocational-Technical Institute
Carbondale, Ill. 62901

APPENDIX H (cont'd)

Mailing List For Allied Health

Programs in Illinois

Southern Illinois University
Dental Hygiene
Vocational-Technical Institute
Carbondale, Ill. 62901

School of Dental Medicine
Bldg. 0153, 0154
Alton, Ill.

Northwestern University
Chicago, Ill.

St. Margaret's Hospital
Spring Valley, Ill.

Children's Memorial Hospital
Chicago, Ill.

Grant Hospital
Chicago, Ill.

Presbyterian - St. Luke's Hospital
Chicago, Ill.

Memorial Hospital of DuPage County
Elmhurst, Ill.

Decatur Memorial Hospital
Decatur, Ill.

Memorial Hospital
Chester, Ill.

St. John's Hospital
Springfield, Ill.

Burnham City Hospital
Champaign, Ill.

Augustana Hospital
Chicago, Ill.

Ravenswood Hospital
Chicago, Ill.

Southern Illinois University
Nursing
Edwardsville Campus
Edwardsville, Ill.

Chicago City College
Southeast Campus
Chicago, Ill.

Blessing Hospital
Quincy, Ill.

Carle Foundation Hospital
Urbana, Ill.

Chicago Wesley Memorial Hospital
Chicago, Ill.

Illinois Masonic Medical Center
Chicago, Ill.

Ingalls Memorial Hospital
Harvey, Ill.

Riverside Hospital
Kankakee, Ill.

Passavant Memorial Area Hospital
Jacksonville, Ill.

Lutheran Hospital
Moline, Ill.

Silver Cross Hosptial
Joliet, Ill.

Julia F. Burnham School of Nursing
Champaign, Ill.

Passavant Memorial Hospital
Chicago, Ill.

St. Anne's Hospital
Chicago, Ill.

APPENDIX H (cont'd)

Mailing List For Allied Health

Programs in Illinois

St. Bernard's Hospital
Chicago, Ill.

South Chicago Community Hospital
Chicago, Ill.

Christ Community Hospital
Oak Lawn, Ill.

Oak Park Hospital
Oak Park, Ill.

Lutheran General and Deaconess Hospitals
Park Ridge, Ill.

Copely Memorial Hospital
Aurora, Ill.

Alton Memorial Hospital
Alton, Ill.

Mennonite Hospital
Bloomington, Ill.

Moline Public Hospital
Moline, Ill.

Freeport Memorial Hospital
Freeport, Ill.

St. Joseph Hospital
Joliet, Ill.

St. Anthony Hospital
Rockford, Ill.

Mount Sinai Hospital Medical Center
Chicago, Ill.

St. Francis Hospital
Evanston, Ill.

St. Therese Hospital
Waukegan, Ill.

H. Douglas Singer Zone Center
Rockford, Ill.

St. Mary of Nazareth Hospital
Chicago, Ill.

Evanston Hospital
Evanston, Ill.

Evangelical School of Nursing
Oak Lawn, Ill.

West Suburban Hospital
Oak Park, Ill.

Graham Hospital
Canton, Ill.

Galesburg Cottage Hospital
Galesburg, Ill.

St. Joseph Hospital
Alton, Ill.

Methodist Hospital of Central Illinois
Peoria, Ill.

St. Anthony's Hospital
Rock Island, Ill.

Lake View Memorial Hospital
Danville, Ill.

Rockford Memorial Hospital
Rockford, Ill.

Holy Cross Hospital
Chicago, Ill.

University of Chicago Hospitals and Clinics
Chicago, Ill.

Sherman Hospital
Elgin, Ill.

Chicago City College, Kennedy-King Campus
Chicago, Ill.

Cook County Hospital
Chicago, Ill.

APPENDIX H (cont'd)

Mailing List For Allied Health

Programs in Illinois

Chicago City College, Amundsen-Mayfair
Chicago, Ill.

Northwest Community Hospital
Arlington Heights, Ill.

Englewood Hospital
Chicago, Ill.

Henrotin Hospital
Chicago, Ill.

Provident Hospital and Training School
Chicago, Ill.

Louis A. Weiss Memorial Hospital
Chicago, Ill.

Skokie Valley Community Hospital
Skokie, Ill.

Roosevelt University
Chicago, Ill.

Kewanee Public Hospital
Kewanee, Ill.

St. Mary's Hospital
Centralia, Ill.

Richland Memorial Hospital
Olney, Ill.

Central YMCA Community College
Chicago, Ill.

St. Mary's Hospital
Quincy, Ill.

Edgewater Hospital
Chicago, Ill.

Franklin Boulevard Community Hospital
Chicago, Ill.

Norwegian-American Hospital
Chicago, Ill.

St. Joseph Hospital
Chicago, Ill.

Woodlawn Hospital
Chicago, Ill.

Chicago City College - Wright Campus
Chicago, Ill.

DeKalb Public Hospital
DeKalb, Ill.

St. Joseph Mercy Hospital
Aurora, Ill.

McHenry County College
Crystal Lake, Ill.

Centreville Township Hospital
E. St. Louis, Ill.

St. Elizabeth Hospital
Danville, Ill.

APPENDIX I

List of Names of Workshop Participants

Chicago Area Workshop

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APPENDIX I (cont'd)

List of Names of Workshop Participants

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Grayslake, Ill. 60030

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DeKalb Area Workshop

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Morton Grove, Ill.

Grossman, Leona
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Dixon, Ill. 61021

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APPENDIX I (cont'd)

List of Names of Workshop Participants

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Springfield Area Workshop

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APPENDIX I (cont'd)

List of Names of Workshop Participants

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APPENDIX I (cont'd)

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APPENDIX I (cont'd)

List of Names of Workshop Participants

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APPENDIX I (cont'd)

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APPENDIX J

Name _____

WORKSHOP PARTICIPANT OPINIONNAIRE

This instrument will allow you opportunity to indicate your feeling concerning selected aspects of the workshop for the development of Behaviorally-Oriented Learning Materials for Allied Health Teaching Personnel. You will agree with some statements and disagree with others. You are offered five possible answers to each statement. For each item, circle the response which best represents your own personal reactions. Following is a definition of the five possible answers.

SA - you strongly agree with the statement
A - you agree but not strongly
N - you are neutral or undecided
D - you disagree but not so strongly
SD - you strongly disagree with the statement

Remember the only correct answer is the one which actually represents how you feel about each statement. The "neutral or undecided" answer should be circled only when you have NO opinion.

Scheduling and Organization

1. The amount of lead time (from when you first heard about the workshop until the first day it began) was sufficient.....SA A N D SD

2. Sufficient time was allotted for the discussion of individual topics presented during the workshop.....SA A N D SD

3. The topics could have been discussed more thoroughly in small group discussion sessions.....SA A N D SD

4. Two days was sufficient time to cover the information presented in the workshop.....SA A N D SD

APPENDIX J (cont'd)

WORKSHOP PARTICIPANT OPINIONNAIRE

5.	Topics were scheduled in an appropriate sequence.....SA	A	N	D	SD
6.	The workshop staff was inaccessible or unapproachable for individual attention.....SA	A	N	D	SD
7.	A greater proportion of time should have been spent in panel discussion.....SA	A	N	D	SD
8.	The schedule was too fixed.....SA	A	N	D	SD
9.	In general, the workshop was well organized.....SA	A	N	D	SD

Content and Presentation

10.	Individual presentations were too long.....SA	A	N	D	SD
11.	The individual speakers dominated the presentations and offered little opportunity for audience participation..SA	A	N	D	SD
12.	The presentations were stimulating and interesting.....SA	A	N	D	SD
13.	The discussions were lead in an effective manner.....SA	A	N	D	SD
14.	The presenters were well organized.....SA	A	N	D	SD
15.	I was stimulated to think objectively about the topics presented.....SA	A	N	D	SD
16.	I expect to be able to apply the content which was presented in the workshop.....SA	A	N	D	SD
17.	Too much jargon was used by the presenters.....SA	A	N	D	SD

APPENDIX J (cont'd)

WORKSHOP PARTICIPANT OPINIONNAIRE

18.	Too much emphasis was placed on topics that were unimportant.....	SA	A	N	D	SD
19.	The presentation of the content material was paced too fast.....	SA	A	N	D	SD
20.	I am pleased with the teaching techniques used for the workshop.....	SA	A	N	D	SD
21.	Sufficient time was devoted to the topic of the anasynthesis of Allied Health occupations into learning activities packages.....	SA	A	N	D	SD
22.	More time should be devoted to the topic of preparing learning experiences from behavioral objectives.....	SA	A	N	D	SD
23.	Insufficient time was allowed for the planning and writing of behavioral objectives for Allied Health occupations.....	SA	A	N	D	SD
24.	Less time should be devoted to the modification of non-behavioral learning materials to behaviorally-oriented learning materials.....	SA	A	N	D	SD

Environment and Facilities

25.	The meeting rooms were adequate and conducive to learning.....	SA	A	N	D	SD
26.	The materials distributed during the workshop were informative and worthwhile.....	SA	A	N	D	SD
27.	The overnight accomodations available to the workshop participants were adequate.....	SA	A	N	D	SD
28.	Food service was poor.....	SA	A	N	D	SD

APPENDIX J (cont'd)

WORKSHOP PARTICIPANT OPINIONNAIRE

29. It is obvious that the establishment at which the workshop was held had good <u>group</u> accomodations.....SA A N D SD

30. The location of this workshop was desirable, based upon its proximity to the major population center in this region of the state.....SA A N D SD

31. The number of participants involved in the workshop was too large to adequately present and discuss the information topics.....SA A N D SD

<u>Satisfactions</u>

32. I would recommend to others that they participate in an Allied Health workshop of this type.....SA A N D SD

33. I anticipate maintaining some type of contact with the Allied Health workshop staff.....SA A N D SD

34. The Allied Health workshop staff should feel that it has accomplished the objectives of this workshop.....SA A N D SD

35. The Allied Health workshop staff did not relate theory to practice.....SA A N D SD

36. I did not think that I would learn as much as I did in this workshop.....SA A N D SD

37. New concepts and ideas were discussed which have a great deal of merit.....SA A N D SD

38. I can see no advantage to this type of short term workshop when compared to other types of teacher education programs.....SA A N D SD

APPENDIX J (cont'd)

WORKSHOP PARTICIPANT OPINIONNAIRE

39. Attendance at a workshop in which greater emphasis would be given the anasynthesis of Allied Health occupations into learning activities packages would be valuable..... SA A N D SD

40. I was impressed with the interest of my fellow participants in the Allied Health workshop..... SA A N D SD

41. Attendance at a workshop in which greater emphasis would be given the modification of non-behavioral learning materials would be beneficial..... SA A N D SD

42. Information of the type offered in this workshop would have relatively little value for administrators of Allied Health teaching personnel..... SA A N D SD

43. Attendance at a workshop in which greater emphasis would be given the preparing of learning experiences from behavioral objectives would be beneficial..... SA A N D SD

44. A workshop which deals with implementing behavioral-oriented learning materials in the classroom situation would be valuable..... SA A N D SD

45. Attendance at a workshop in which greater emphasis would be given the planning and writing of behavioral objectives for Allied Health occupations would be beneficial.. SA A N D SD

46. Additional comments: (Use back of page if desired)

APPENDIX K

Analysis of Responses as Taken

From the Participant Opinionnaires

-Chicago-

Scheduling and Organization

		SA	A	N	D	SD	NA
1.	The amount of lead time (from when you first heard about the workshop until the first day it began) was sufficient.....	10	3	2	2	2	
2.	Sufficient time was allotted for the discussion of individual topics presented during the workshop.....	16	3				
3.	The topics could have been discussed more thoroughly in small group discussion sessions.....		2	1	10	6	
4.	Two days was sufficient time to cover the information presented in the workshop.....	3	12	1	3		
5.	Topics were scheduled in an appropriate sequence.....	3	16				
6.	The workshop staff was inaccessible or unapproachable for individual attention.....				2	17	
7.	A greater proportion of time should have been spent in panel discussion.....	1			9	9	
8.	The schedule was too fixed.....				6	13	
9.	In general, the workshop was well organized.....	13	6				

Content and Presentation

10.	Individual presentations were too long.....			1	9	9	

APPENDIX K (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Chicago-

	SA	A	N	D	SD	NA
11. The individual speakers dominated the presentations and offered little opportunity for audience participation..				4	15	
12. The presentations were stimulating and interesting.....	15	4				
13. The discussions were lead in an effective manner.....	12	6		1		
14. The presenters were well organized.....	11	7		1		
15. I was stimulated to think objectively about the topics presented.....	13	6				
16. I expect to be able to apply the content which was presented in the workshop.....	8	9	2			
17. Too much jargon was used by the presenters.....	1	1		9	8	
18. Too much emphasis was placed on topics that were unimportant.....	1			10	8	
19. The presentation of the content material was paced too fast.....				9	10	
20. I am pleased with the teaching techniques used for the workshop.....	10	9				
21. Sufficient time was devoted to the topic of the anasynthesis of Allied Health occupations into learning activities packages.....	4	12	1	2		
22. More time should be devoted to the topic of preparing learning experiences from behavioral objectives.....	1	10	4	4		

APPENDIX K (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Chicago-

		SA	A	N	D	SD	NA
23.	Insufficient time was allowed for the planning and writing of behavioral objectives for Allied Health occupations.....	1	2	2	10	4	
24.	Less time should be devoted to the modification of non-behavioral learning materials to behaviorally-oriented learning materials.....		1	4	6	7	1

Environment and Facilities

25.	The meeting rooms were adequate and conducive to learning.....	6	9		4		
26.	The materials distributed during the workshop participants were adequate.....	7	12				
27.	The overnight accomodations available to the workshop participants were adequate.....		2	11			6
28.	Food service was poor.....	1	1	2	8	5	2
29.	It is obvious that the establishment at which the workshop was held had good group accomodations.....	4	10	5			
30.	The location of this workshop was desirable, based upon its proximity to the major population center in this region of the state.....	7	7	4	1		
31.	The number of participants involved in the workshop was too large to adequately present and discuss the information topics.....				9	9	1

APPENDIX K (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Chicago-

Satisfactions

	SA	A	N	D	SD	NA
32. I would recommend to others that they participate in an Allied Health workshop of this type.....	12	7				
33. I anticipate maintaining some type of contact with the Allied Health workshop staff.....	7	9	2	1		
34. The Allied Health workshop staff should feel that it has accomplished the objectives of this workshop.....	11	7	1			
35. The Allied Health workshop staff did not relate theory to practice.....				7	12	
36. I did not think that I would learn as much as I did in this workshop.....	4	8	4	2	1	
37. New concepts and ideas were discussed which have a great deal of merit.....	11	6		2		
38. I can see no advantage of this type of short term workshop when compared to other types of teacher education programs.....				7	12	
39. Attendance at a workshop in which greater emphasis would be given the anasynthesis of Allied Health occupations into learning activities packages.....	5	11		3		
40. I was impressed with the interest of my fellow participants in the Allied Health workshop.....	7	9	2			1
41. Attendance at a workshop in which greater emphasis would be given the modification of non-behavioral learning materials would be beneficial.....	6	11	2			

APPENDIX K (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Chicago-

	SA	A	N	D	SD	NA
42. Information of the type offered in this workshop would have relatively little value for administrators of Allied Health teaching personnel.....			2	7	10	
43. Attendance at a workshop in which greater emphasis would be given the preparing of learning experiences from behavioral objectives would be beneficial.....	8	11				
44. A workshop which deals with implementing behaviorally-oriented learning materials in the classroom situation would be valuable.....	9	8	2			
45. Attendance at a workshop in which greater emphasis would be given the planning and writing of behavioral objectives for Allied Health occupations would be beneficial.....	6	12	1			

46. Additional comments: (Use back of page if desired)

APPENDIX L

Analysis of Responses as Taken

From the Participant Opinionnaires

-DeKalb-

Scheduling and Organization

		SA	A	N	D	SD	NA
1.	The amount of lead time (from when you first heard about the workshop until the first day it began) was sufficient	13	2			1	
2.	Sufficient time was allotted for the discussion of individual topics presented during the workshop	9	5		2		
3.	The topics could have been discussed more thoroughly in small group discussion sessions		7	2	3	4	
4.	Two days was sufficient time to cover the information presented in the workshop	7	6	1	2		
5.	Topics were scheduled in an appropriate sequence	9	6	1			
6.	The workshop staff was inaccessible or unapproachable for individual attention				3	13	
7.	A greater proportion of time should have been spent in panel discussion		2	4	3	7	
8.	The schedule was too fixed	1		2	8	5	
9.	In general, the workshop was well organized	10	6				

Content and Presentation

10.	Individual presentations were too long		1	1	5	9	

APPENDIX L (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-DeKalb-

	SA	A	N	D	SD	NA
11. The individual speakers dominated the presentations and offered little opportunity for audience participation..			1	4	11	
12. The presentations were stimulating and interesting.....	6	9	1			
13. The discussions were lead in an effective manner.....	11	5				
14. The presenters were well organized.....	6	10				
15. I was stimulated to think objectively about the topics presented.....	9	7				
16. I expect to be able to apply the content which was presented in the workshop.....	7	9				
17. Too much jargon was used by the presenters.....		1	3	5	7	
18. Too much emphasis was placed on topics that were unimportant.....			2	5	9	
19. The presentation of the content material was paced too fast.....			3	5	7	1
20. I am pleased with the teaching techniques used for the workshop.....	8	7	1			
21. Sufficient time was devoted to the topic of the anasynthesis of Allied Health occupations into learning activities packages.....	3	13				
22. More time should be devoted to the topic of preparing learning experiences from behavioral objectives.....	4	7	2	2	1	
23. Insufficient time was allowed for the planning and writing of behavioral objectives for Allied Health occupations.....		3	2	6	5	

APPENDIX L (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-DeKalb-

	SA	A	N	D	SD	NA
24. Less time should be devoted to the modification of non-behavioral learning matetials to behaviorally-oriented learning materials.....		2	5	4	5	
Environment Facilities						
25. The meeting rooms were adequate and conducive to learning.....	6	7		3		
26. The materials distributed during the workshop were informative and worthwhile.....	11	4	1			
27. The overnight accomodations available to the workshop participants were adequate.....	8	1	4			3
28. Food service was poor.....			3	3	10	
29. It is obvious that the establishment at which the workshop was held had good group accomodations.....	8	5	3			
30. The location of this workshop was desirable, based upon its proximity to the major population center in this region of the state.....	10	5	1			
31. The number of participants involved in the workshop was too large to adequately present and discuss the information topics.....				6	10	
Satisfactions						
32. I would recommend to others that they participate in an Allied Health workshop of this type.....	13	2			1	

APPENDIX L (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-DeKalb-

		SA	A	N	D	SD	NA
33.	I anticipate maintaining some type of contact with the Allied Health workshop staff.....	5	3	7	1		
34.	The Allied Health workshop staff should feel that it has accomplished the objectives of this workshop.....	10	5		1		
35.	The Allied Health workshop staff did not relate theory to practice.....				6	9	1
36.	I did not think that I would learn as much as I did in this workshop.....	3	7	3	3		
37.	New concepts and ideas were discussed which have a great deal of merit.....	5	10	1			
38.	I can see no advantage of this type of short-term workshop when compared to other types of teacher education programs.....		1		3	12	
39.	Attendance at a workshop in which greater emphasis would be given the anasynthesis of Allied Health occupations into learning activities packages would be valuable.....	4	10	1			1
40.	I was impressed with the interest of my fellow participants in the Allied Health workshop.....	6	8	2			
41.	Attendance at a workshop in which greater emphasis would be given the modification of non-behavioral learning materials would be beneficial.....	7	7	1	1		
42.	Inforamtion of the type offered in this workshop would have relatively little value for administrators of Allied Health teaching personnel.....		1	1	6	8	

APPENDIX L (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-DeKalb-

		SA	A	N	D	SD	NA
43.	Attendance at a workshop in which greater emphasis would be given the preparing of learning experiences from behavioral objectives would be beneficial.....	5	10	1			
44.	A workshop which deals with implementing behaviorally-oriented learning materials in the classroom situation would be valuable.....	7	8		1		
45.	Attendance at a workshop in which greater emphasis would be given the planning and writing of behavioral objectives for Allied Health occupations would be beneficial.....	3	5	5	2	1	

46. Additional comments: (Use back of page if desired)

APPENDIX M

Analysis of Responses as Taken

From the Participant Opinionnaires

-Springfield-

Scheduling and Organization

	SA	A	N	D	SD	NA
1. The amount of lead time (from when you first heard about the workshop until the first day it began) was sufficient	30	4				
2. Sufficient time was allotted for the discussion of individual topics presented during the workshop	11	15	2	6		
3. The topics could have been discussed more thoroughly in small group discussion sessions	10	8	4	9	2	1
4. Two days was sufficient time to cover the information presented in the workshop	5	13	3	11	2	
5. Topics were scheduled in an appropriate sequence	18	13	2			1
6. The workshop staff was inaccessible or unapproachable for individual attention	1	2		3	28	
7. A greater proportion of time should have been spent in panel discussion		2	6	10	16	
8. The schedule was too fixed		3	4	13	14	
9. In general, the workshop was well organized	22	12				

Content and Presentation

10. Individual presentations were too long		4	2	11	17	

APPENDIX M (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Springfield-

		SA	A	N	D	SD	NA
11.	The individual speakers dominated the presentations and offered little opportunity for audience participation..			1	11	22	
12.	The presentations were stimulating and interesting.....	21	11	1			1
13.	The discussions were lead in an effective manner.....	19	14	1			
14.	The presenters were well organized.....	24	10				
15.	I was stimulated to think objectively about the topics presented.....	23	10				1
16.	I expect to be able to apply the content which was presented in the workshop.....	18	12	4			
17.	Too much jargon was used by the presenters.....		2	4	14	14	
18.	Too much emphasis was placed on topics that were unimportant.....		2	3	11	18	
19.	The presentation of the content material was paced too fast.....	1	2	6	16	9	
20.	I am pleased with the teaching techniques used for the workshop.....	17	15	2			
21.	Sufficient time was devoted to the topic of the anasynthesis of Allied Health occupations into learning activities packages.....	7	19	4	4		
22.	More time should be devoted to the topic of preparing learning experiences from behavioral objectives.....	7	15	2	8		2
23.	Insufficient time was allowed for the planning and writing of behavioral objectives for Allied Health occupations.....	2	7	4	18	2	1

APPENDIX M (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Springfield-

	SA	A	N	D	SD	NA
24. Less time should be devoted to the modification of non-behavioral learning materials to behaviorally-oriented learning materials.....	1	1	8	12	10	2
Environment and Facilities						
25. The meeting rooms were adequate and conducive to learning.....	9	14	4	4	1	2
26. The materials distributed during the workshop were informative and worthwhile.....	19	13	1			1
27. The overnight accomodations available to the workshop participants were adequate.....	16	5	5	1		7
28. Food service was poor.....	3	2	10	7	9	3
29. It is obvious that the establishment at which the workshop was held had good group accomodations.....	7	20	4	1		2
30. The location of this workshop was desireable, based upon its proximity to the major population center in this region of the state.....	10	15	8			1
31. The number of participants involved in the workshop was too large to adequately present and discuss the information topics.....	2	5	4	14	7	2
Satisfactions						
32. I would recommend to others that they participate in an Allied Health workshop of this type.....	30	3				1

APPENDIX M (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Springfield-

		SA	A	N	D	SD	NA
33.	I anticipate maintaining some type of contact with the Allied Health workshop staff.....	13	7	12	1		1
34.	The Allied Health workshop staff should feel that it has accomplished the objectives of this workshop.....	22	10	1			1
35.	The Allied Health workshop staff did not relate theory to practice.....		2	1	10	18	3
36.	I did not think that I would learn as much as I did in this workshop.....	7	8	13	2	2	2
37.	New concepts and ideas were discussed which have a great deal of merit.....	18	10	5			1
38.	I can see no advantage of this type of short-term workshop when compared to other types of teacher education programs.....			2	9	22	1
39.	Attendance at a workshop in which greater emphasis would be given the anasynthesis of Allied Health occupations into learning activities packages would be valuable.....	13	12	7	2		
40.	I was impressed with the interest of my fellow participants in the Allied Health workshop.....	12	19	2			1
41.	Attendance at a workshop in which greater emphasis would be given the modification of non-behavioral learning materials would be beneficial.....	9	12	8	3	1	1
42.	Information of the type offered in this workshop would have relatively little value for administrators of Allied Health teaching personnel.....	1		2	8	20	3

APPENDIX M (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Springfield-

	SA	A	N	D	SD	NA
43. Attendance at a workshop in which greater emphasis would be given the preparing of learning experiences from behavioral objectives would be beneficial.....	11	20	2			1
44. A workshop which deals with implementing behaviorally-oriented learning materials in the classroom situation would be valuable.....	17	14	1			1
45. Attendance at a workshop in which greater emphasis would be given planning and writing of behavioral objectives for Allied Health occupations would be beneficial.....	9	13	6	3	1	2

46. Additional comments: (Use back of page if desired)

APPENDIX N

Analysis of Responses as Taken

From the Participant Opinionnaires

-Carbondale-

Scheduling and Organization

		SA	A	N	D	SD	NA
1.	The amount of lead time (from when you first heard about the workshop until the first day it began) was sufficient.....16		4	1	3		1
2.	Sufficient time was allotted for the discussion of individual topics presented during the workshop.....15		7	1	2		
3.	The topics could have been discussed more thoroughly in small group discussion sessions..... 5		8		6	4	2
4.	Two days was sufficient time to cover the information presented in the workshop..... 4		8	2	5	4	2
5.	Topics were scheduled in an appropriate sequence.....14		11				
6.	The workshop staff was inaccessible or unapproachable for individual attention..... 2				2	21	
7.	A greater proportion of time should have been spent in panel discussion..... 1		1	6	12	5	
8.	The schedule was too fixed.....			1	13	11	
9.	In general, the workshop was well organized.....17		7				1

Content and Presentation

		SA	A	N	D	SD	NA
10.	Individual presentations were too long..... 1			1	13	10	

APPENDIX N (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Carbondale-

	SA	A	N	D	SD	NA
11. The individual speakers dominated the presentations and offered little opportunity for audience participation..				6	19	
12. The presentations were stimulating and interesting.....	18	7				
13. The discussions were lead in an effective manner.....	18	7				
14. The presenters were well organized.....	20	5				
15. I was stimulated to think objectively about the topics presented.....	19	6				
16. I expect to be able to apply the content which was presented in the workshop.....	11	11	3			
17. Too much jargon was used by the presenters.....			2	10	12	1
18. Too much emphasis was placed on topics that were unimportant.....	1	1		13	10	
19. The presentation of the content material was paced too fast.....	1	2	5	10	6	1
20. I am pleased with the teaching techniques used for the workshop.....	12	11	2			
21. Sufficient time was devoted to the topic of the anasynthesis of Allied Health occupations into learning activities packages.....	6	10	4	5		
22. More time should be devoted to the topic of preparing learning experiences from behavioral objectives.....	3	12	5	3	1	1
23. Insufficient time was allowed for the planning and writing of behavioral objectives for Allied Health occupation.....	1	5	4	7	8	

APPENDIX N (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Carbondale-

	SA	A	N	D	SD	NA
24. Less time should be devoted to the modification of non-behavioral learning materials to behaviorally-oriented learning materials.....	1	1	4	9	7	3
Environment and Facilities						
25. The meeting rooms were adequate and conducive to learning.....	5	15		5		
26. The materials distrubuted during the workshop were informative and worthwhile.....	15	10				
27. The overnight accomodations available to the workshop participants were adequate.....	7	4	8	1		5
28. Food service was poor.....			2	10	11	2
29. It is obvious that the establishment at which the workshop was held had good group accomodations.....	11	10	3			1
30. The location of this workshop was desirable, based upon its proximity to the major population center in this region of the state.....	14	8	2	1		
31. The number of participants involved in the workshop was too large to adequately present and discuss the information topics.....			2	12	10	1
Satisfactions						
32. I would recommend to others that they participate in an Allied Health workshop of this type.....	17	8				

APPENDIX N (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Carbondale-

		SA	A	N	D	SD	NA
33.	I anticipate maintaining some type of contact with the Allied Health workshop staff.....	14	9	2			
34.	The Allied Health workshop staff should feel that it has accomplished the objectives of this workshop.....	18	7				
35.	The Allied Health workshop staff did not relate theory to practice.....	1		1	10	13	
36.	I did not think that I would learn as much as I did in this workshop.....	9	10	2	2	1	1
37.	New concepts and ideas were discussed which have a great deal of merit.....	12	11	2			
38.	I can see no advantage of this type of short-term workshop when compared to other types of teacher education programs.....	1		1	7	16	
39.	Attendance at a workshop in which greater emphasis would be given the anasynthesis of Allied Health occupations into learning activities packages would be valuable.....	7	10	8			
40.	I was impressed with the interest of my fellow participants in the Allied Health workshop.....	10	13	1		1	
41.	Attendance at a workshop in which greater emphasis would be given the modification of non-behavioral learning materials would be beneficial.....	5	9	7	1	1	2
42.	Information of the type offered in this workshop would have relatively little value for administrators of Allied Health teaching personnel.....	1	1	3	5	14	1

APPENDIX N (cont'd)

Analysis of Responses as Taken

From the Participant Opinionnaires

-Carbondale-

		SA	A	N	D	SD	NA
43.	Attendance at a workshop in which greater emphasis would be given the preparing of learning experience from behavioral objectives would be beneficial.....	7	12	1	2		3
44.	A workshop which deals with implementing behaviorally-oriented learning materials in the classroom situation would be valuable.....	11	12	1			1
45.	Attendance at a workshop in which greater emphasis would be given the planning and writing of behavioral objectives for Allied Health occupations would be beneficial.....	9	11	2	1		2

46. Additional comments: (Use back of page if desired)

APPENDIX O

Question #46

Additional Comments

CHICAGO

Thank you, it was a pleasure seeing your own interest in the workshop. I have achieved my objective in coming.

Suggest that if Mager's method is to be used, the participant's should be asked to read his book before coming to the workshop.

DEKALB

I enjoyed every minute of the Conference----and it was wonderful having "young professor's".

Thanks so much for the learning experience. I've passed it on to others in our group. Even though the class size was smaller than you anticipated, I felt it was much more comfortable and more inducing to learn this type of material. P.S. It was good to hear about dentistry and not nursing, as the past workshops presented.

Later starting time the first day.

Am hopeful that additional workshops will be given for H.O. personnel. As a fairly new member of the teaching staff, I feel I have a lot to learn... this one was well worthwhile.

SPRINGFIELD

Would have liked more time to work with own materials, and get help with them. Feel a smaller group might have been more workable, but there were advantages to having varied backgrounds represented.

Would be interested in a bulletin from SIU, very interesting.

The majority of participants were apparently in nursing which tends to make the whole thing rather nursing oriented----a disadvantage to those who are not in the nursing field.

I do feel that during the process of implementing these ideas into our program, I will need occassional (maybe frequent) help in order to stay on the right track.

APPENDIX O (cont'd)

Question #46

Additional Comments

You really got to me! I'm ready to go back to Parkland and start using behaviorally-oriented objectives at the task level and aims only for the course level. I wasn's sure I would gain much by coming, but I was pleasantly surprized - thanks. P.S. Would have helped if group had been more homogenous. I grew tired of hearing about nursing.

Very good workshop. Very stimulating--I enjoyed being a student rather than instructor for 2 days. I think these 2 days will help me a great deal in what I am presently engaged -- planning curriculum in Medical Surgical Nursing.

I am indeed grateful for this opportunity. It was a real privilege.

More time requested for performance steps and performance step details -- writing and analysis of above would be desirable due to overall responsibility.

Very helpful! I think the sessions were a little too long -- perhaps an earlier or more frequent breaks.

Thank you, Dave & Dick, for teaching in the workshop. I think it has been valuable and you have both done a very good job. You both impress me as being very sincere, conscientious, and hard-working and I like you both - don't agree with you 100% but was stimulated to think and change a few things in our program -- would change more than a few if it were possible. We are limited by lack of resources in some areas. Will be looking forward to more workshops.

I found the workshop much more beneficial and stimulating than I had anticipated. Thank you.

I would have appreciated a bibliography or reference list prior to the workshop.

I would welcome the opportunity of becoming involved in a workshop with a smaller group where more emphasis could be placed on modification and improvement of present objectives of individual curriculums. I really feel I've learned a lot of new information but am somewhat disappointed that we didn't have the opportunity to "hash over" our present objectives. Thank you very much for a very worthwhile experience.

Thanks to both Dick & Dave for a job well-done, since we only go around once, I'm glad I met them.

I have gained a great amount of help from this workshop, and have enjoyed the two instructor's very much. They were both helpful and amusing.

APPENDIX O (cont'd)

Question #46

Additional Comments

I had never been to a workshop of this type and was dreading it because of bad reports I had heard about unrelated information which had been presented by other directors. I have thoroughly enjoyed this workshop and feel it was well worth the trip and time. Thanks a heap!

Enjoyed it very much - would like to learn more and thought both Dave & Dick did an excellent job. Want to thank them both for personal help I received.

I am very well satisfied with the assistance received in writing behavioral objectives. Because the occupational interests of participants were so varied, I did not receive some of the assistance I wanted in planning a cooperative health occupations course. This is not the fault of the people who planned the workshop but of unrealistic expectations on my part. I did a great deal of pre-planning for this conference so it should be of great help to me.

It seems to me that it would be very valuable to have another workshop for Vocational-Allied Health Coordinators and Instructors only so that we may improve our teaching and our articulation with Junior or Community College Programs. I do not feel that the instructors in three-year diploma programs should be invited to attend future conferences funded for Vocational-Allied Health Fields.

Enjoyed very much, wish I had taken before teaching.

Dave, I enjoyed your presentations & learned a great deal from you, but I must admit that at first I was distracted by your informal attire & manner.

Dick, I also enjoyed your presentations, but is the "colorful language" (¢$&#*@&@¢#%$&_+*%&$¢#*(*¢&%) necessary?

The instructors were most helpful and interesting - I feel they did an excellent job. Thanks - for individual help.

CARBONDALE

Thoroughly enjoyed this workshop.

Thanks so much to Dick & Dave for giving so generously of yourselves that these workshops might be successful.

Very enjoyable - informative.

APPENDIX O (cont'd)

Question #46

Additional Comments

Enjoyable presentation; the material was valuable. I regret that more time could not have been spent on this topic.

I enjoyed the two days, I was not familiar with the unit learning module. This is new to me & was not presented in previous T & I classes. Thank you.

I believe this two-day workshop was a review of prior courses taken and sort of tied loose ends together. However, I feel if I came into this workshop cold I would have had problems covering the vast amount of material presented. I learned something new - (unit learning module) and feel there will always be new things to learn.

Wonderful workshop. Instructors were well-informed, delightful people - I so appreciate their time and knowledge.

I was impressed with the individual instruction and assistance given to all the students by all the instructors, and by the instructors obvious concern that each student would be able to apply the material covered to his own situation.

I feel that this workshop was very well presented and very educational to Allied Health Fields.

This explained more to me than the course I took during the fall at SIU (488) I think I can understand what use this is in my teaching.

Thank you for your help and time spent with us. I wish we could have at least a week of this type of workshop.

The workshop was excellent with one exception - not enough time to really learn what was expected. A guideline for program development would have been more than nice to have received - what with the short time and enormous amount of material covered, I feel that I shall forget what little I did absorb before I have time to put it into actual use.

Well-done.

I feel I gained a great deal from the workshop. Although I feel ill-qualified to fill out this opinionnaire, I am a complete novice in this area. Just recently beginning the job as clinical instructor in the LPN program.

Preparation of minicourses & work in use of media would help many of those here.

Allied Health Workshop

APPENDIX P

A Workshop Presented by the Division of
Vocational and Technical Education
and Faculty of Technical and Industrial Education,
Southern Illinois University,
for In-Service Allied Health Teaching Personnel

Developing Behaviorally-Oriented Learning Materials

Workshop Director
Dr. Richard F. Bortz

Project Funding Agency:
Illinois Board of Vocational Education and Rehabilitation
Project Number 13-07-09

APPENDIX P

Description of the Program

I. Title of the Workshop: A Workshop for Allied Health Teaching Personnel in Developing Behaviorally-Oriented Instructional Materials.

II. Major Purpose of the Workshop: To provide in-service Allied Health teaching personnel with information, instruction and assistance in developing behaviorally-oriented learning materials for use in the classroom.

III. Topics for the Workshop:

1) The Anasynthesis of Allied Health Occupations into Learning Activities Packages

2) Planning and Writing Behavioral Objectives for Allied Health Occupations

3) Preparing Learning Experiences from Behavioral Objectives

4) Modification of Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials

IV. Agenda:

First Day	Activities	Speaker
8:00-8:30 a.m.	Introduction and Orientation	Bortz
8:30-10:15 a.m.	Anasynthesis of the Occupation	Bortz
10:15-10:30 a.m.	Coffee	
10:30-12 noon	Converting Occupational Activities into Learning Activities Packages	Bortz
12 noon-1:00 p.m.	Lunch	
1:00-2:45 p.m.	Defining and Identifying Purpose, Aims, and Behavioral Objectives	Miles
2:45-3:00 p.m.	Coffee	
3:00-4:30 p.m.	Constructing Behavioral Objectives	Miles

APPENDIX P (cont'd)

Description of the Program

Second Day	Activities	Speaker
8:30-10:15 a.m.	Developing Health-Related Occupational Programs of Study from Occupational Analyses	Bortz
10:15-10:30 a.m.	Coffee	
10:30-12 noon	Developing Behaviorally-Oriented Units of Study for Allied Health Occupations	Bortz
12 noon-1:00 p.m.	Lunch	
1:00-2:45 p.m.	Planning for Behaviorally-Oriented Learning Materials	Miles
2:45-3:00 p.m.	Coffee	
3:00-4:30 p.m.	Modifying Non-Behavioral Learning Materials to Behaviorally-Oriented Learning Materials	Bortz and Miles

APPENDIX Q

General Information Form

1. Name _____ (Last), _____ (First)

2. Home Address _____ (Street), _____ (City), _____ (Zip)

3. Place of Employment _____ (Name)

   _____ (Street), _____ (City), _____ (Zip)

4. Occupational Title _____

5. Brief description of occupational duties _____

   _____

   _____

6. Undergraduate major _____

7. Degrees held

   ____ A.A. _____ (Date received) _____ (Institution)

   ____ B.S. _____ (Date received) _____ (Institution)

   ____ M.A. _____ (Date received) _____ (Institution)

   ____ Ed.D. or Ph.D. _____ (Date received) _____ (Institution)

   ____ Other _____ (Title)

   _____ (Date received) _____ (Institution)

APPENDIX R

MEMORANDUM

TO: All Allied Health Workshop Participants

FROM: Dr. Richard F. Bortz, Workshop Director

SUBJECT: Accomodations

For your convenience while attending the workshop, the following list of accomodations is included. Since the Chicago State College, West Center is located in the metropolitan Chicago area, no specific motels, hotels or restaurants are named, due to the large number of accomodations. However, accomodations for the participants attending the DeKalb, Springfield or Carbondale workshops, specific establishments are noted.

Chicago

Place of Workshop:	Chicago State College, West Center 500 N. Pulaski, Chicago, Illinois
Lodging:	Hotels and motels in the loop area and Manheim Road.
Meals:	Restaurants in area
Parking:	Parking at West Center parking lot. Alert attendant on duty that you are Allied Health Workshop Participant.

DeKalb

Place of Workshop:	Northern Illinois University, Montgomery Hall Room 441, Campus
Lodging:	Holiday Inn, University Center, Golden Harvest Motel.
Meals:	University Center, various privately owned area restaurants
Parking:	Special parking sticker provided on request to guest who stay at Center. Metered parking other option.

Springfield

Place of Workshop:	Holiday Inn, South Routh 66 at 6th Street
Lodging:	Holiday Inn, South, other privately owned hotels and motels
Meals:	Holiday Inn South dining rooms
Parking:	Holiday Inn South

APPENDIX R (cont'd)

MEMORANDUM

Carbondale

Place of Workshop:	Southern Illinois University School of Technology
Lodging:	Holiday Inn, Ramada Inn, other privately owned motels
Meals:	University Center, Holiday Inn, Ramada Inn, various privately owned area restaurants.
Parking:	School of Technology parking lot. Special stickers provided.

As a reminder, all expenses for food, lodging, and travel will be assumed by the individual participants.

September 2, 1970

RFB/jdh

APPENDIX S

Reprinted from EDUCATIONAL THEORY, Vol. XV, No. 2, April, 1965

INTELLIGENCE, CATEGORICAL SYSTEMS, AND CONTENT ORGANIZATION

by Ronald W. Stadt

REGARDLESS OF THE PARTICULAR PURPOSES OF EDUCATIONAL INSTITUTIONS, THE THEORETICAL AFFILIATIONS OF THEIR ADMINISTRATORS AND INSTRUCTORS OR THE CHARACTERISTICS OF THEIR CLIENTELES, ALL EDUCATIONAL INSTITUTIONS ARE CONCERNED IN SOME WAY WITH IMPROVING INDIVIDUAL INTELLECTUAL FACILITY AND ATTEMPT TO ORGANIZE AND PRESENT CONTENT IN MANNERS THAT EXPEDITE THIS END. Defining education in this way emphasized the idea that success in education depends in large measure upon how well we understand intellectual development and the related problems of content organization and presentation--no matter what we would accomplish specifically.

The purpose of this article is not to examine intelligence or content organization and presentation at the level of detail but rather to submit and explain broad statements regarding (a) the nature of intelligence, (b) the nature of categorical systems and (c) the major implications of these statements for the organization and presentation of subject matter content.

INTELLIGENCE

INTELLIGENCE IS A DERIVATIVE OF HEREDITY AND EXPERIENCE WHICH IS EVIDENCED BY THE FACILITY TO CATEGORIZE AND INTEGRATE OBJECTS AND EVENTS.

To explain in detail what is meant by this statement, one should begin with a discussion of the effects of hereditary and environmental variables upon the formation of intelligence. However, such an undertaking is not fitting for a journal article and has been well-done elsewhere.[1] Furthermore, an understanding of the relative effects of nature and nurture upon the development of intelligence is not important to an understanding of the issues presented in this article.

RONALD W. STADT is presently the Director of Education at the American Institute of Baking in Illinois. He is specifically interested in developing philosophical, sociological and psychological foundations for industrial arts and technical education.

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1. Perhaps the most thorough and insightful examination of the nature-nurture controversy is J. McV. Hunt's Intelligence and Experience, New York, Ronald Press, 1961.

APPENDIX S (cont'd)

Reprinted from EDUCATIONAL THEORY, Vol. XV, No. 2, April, 1965

INTELLIGENCE, CATEGORICAL SYSTEMS, AND CONTENT ORGANIZATION

by Ronald W. Stadt

For present purposes, all that need be assumed about the nature-nurture controversy is that the significance of environmental variables justifies the belief that intelligence is changeable.[2] (Without this assumption, discourse about education would be meaningless.) This idea is adequately supported by contemporary psychology. Indeed, it appears that the nature side of the controversy is losing ground at an increasing rate. Reference to heredity and experience is included in the above definition because the importance of these two categories of variables has not been established and because few psychologists argue that one or the other is the sole determinant of intelligence.

CATEGORIZATION

The latter part of the above definition is directly related to the purposes of this article. The words "categorize and integrate objects and events" are of major importance. To categorize means to classify, to label things according to established groupings (or, as is sometimes the case, to modify old groupings or design new categories),[3] to put things in their respective pigeonholes, so to speak. One who is adept at categorization readily identifies things as this and/or that.

As one becomes more intelligent, one's distinctions become more sophisticated. An automobile is no longer just a car. It is either American or foreign; standard, sport or compact, Oldsmobile, Chrysler . . .Mercury; etc. Put another way, one aspect of the scale of intelligence is the scale of explicitness regarding classification. As classification becomes more accurate, precise, explicit, timely--many adjectives are appropriate--intelligence is maximized.

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2. Some biologists submit that the critical issue is not the relative importance of heredity and environment but rather how each may be controlled to maximize intellectual development. This thinking also suggests that intelligence is changeable.

3. Creativity involves the establishment of new categories and/or integrations and can thus be classed as a specific kind of intelligence.

APPENDIX S (cont'd)

Reprinted from EDUCATIONAL THEORY, Vo. XV, No. 2, April, 1965

INTELLIGENCE, CATEGORICAL SYSTEMS, AND CONTENT ORGANIZATION

by Ronald W. Stadt

INTEGRATION

To integrate means to put back together again, to form into a whole. Once what one perceives has been analyzed and put into classes of things, the units must be related meaningfully (always in the mind and sometimes in the environment) with themselves and with elements from other times and places. If one can only say that given objects are chairs, he is not very intelligent.[4] The intelligent person considers chairs in their temporal and spatial relationships. A statement such as "This pedestal chair is the one Mr. Smith uses each evening while reading his newspaper in the living room" is more indicative of intelligence regarding chairs than is the simple "This is a chair".

Peculiar circumstances require the intelligent person, the person who understands the world around him, to make many kinds of connections between chairs and other objects and events. When and how it became possible to produce a chair at a price most people could afford, the history of a particular chair, how chairs will fare in light of changing interior design, whether a given design meets minimum safety and health requirements, and many other connections may concern the intelligent person. Put another way, a second aspect of the scale of intelligence is the scale of number and complexity of integrations. When integrations are compound and complex, intelligence is maximized.

Thus far it has been argued that level of intelligence depends upon quantity and quality of categorizations and integrations. These are the major processes of thought. It remains to be said about categorization and integration that they are not discrete, especially not in time. It is sometimes difficult to say that a given act of thought is categorization and not integration, because categorization often involves comparison and contrast, and these are sepcial and very useful methods of showing relationships. Even if the processes of categorization and integration are, for the most part, different in kind, they often occur very close together in time.

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4. There are situations in which the most intelligent act is to simply call a chair a chair and to think no more about it. Sophisticated action involves selective recall of previous categorizations and integrations.

The above discussion describes potential to deal with chairs in many situations, not complete acts of thought in specific situations.

APPENDIX S (cont'd)

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INTELLIGENCE, CATEGORICAL SYSTEMS, AND CONTENT ORGANIZATION

by Ronald W. Stadt

What happens when one encounters a typical "What's going on here?" picture quiz exemplifies categorization and integration in combination. Sometimes categorizations of the separate elements in the picture are possible before attempts to examine the action are made. But often the elements cannot be identified separately, i.e., can be categorized only when they are considered in relation one to another. In most cases, categorization is not complete until integrations are made. When integration occurs, objects are no longer classed in isolation--the chair is no longer just a chair but rather a patio chair or a chair Emil is sitting on, etc. Put another way, classification is incomplete until spatial and/or temporal descriptions are added, and these additions always involve integrations with other objects and/or events.[5] Categorization may be defined as a simple beginning of description or identification, and integration may be defined as higher level, continuing description. But they are inseparable and convergent. Categorization establishes simple awareness which is concomitant with (or followed very closely by) the process of integration; together they establish higher levels of intelligibility.

OBJECTS AND EVENTS

The major stuff of thought, the material that is processed, what is thought about, is objects and events.[6] Little more need be said to explain the meaning of these two works in the above definition of intelligence. Thought deals with things in terms of times and places, with "What's going on in the world?" kinds of questions--past, present, and future; here, there, and yon. Objects are connected, related, integrated with times and places, i.e., with events and other objects. Put another way, spatial and temporal description are the stuff of thought. Spatial and temporal descriptions are inseparable; they aid and abet each other. They are the essence of all description, i.e., of categorizations and integrations.

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5. Neither process is ever complete. There are always more possible connections, i.e., always more to be known about objects, times and places. Higher level description is always possible, though often difficult.

6. Thought is a special kind of event--the kind psychologists, neurophysiologists, and others try to categorize and integrate.

APPENDIX S (cont'd)

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CATEGORICAL SYSTEMS

If education is to facilitate intellectual development and intellectual development depends upon one's ability to categorize and integrate objects and events, one who would organize materials for instruction should understand the nature of categorical systems. Understanding the processes of categorization and integration is not enough. To assure that youngsters use these processes intelligently as they organize ideas in their minds and/or to organize instructional materials, educators must also understand the products of these processes, i.e., categorical systems themselves. This section attempts to define several major characteristics of categorical systems more fully than did the previous section.

MULTIPLICITY

Perhaps the most important characteristic of categorical systems is their multiplicity. Objects and events that occur with reasonable frequency can be classed in many ways. For example, major aspects of productive society, important segments of the world of work, can be categorized: (1) according to size of organization from the small, local firm which employs a limited number of workers to the large corporate enterprise which employs thousands of workers and operates at the international level; (2) according to degree of mechanization which mass produces goods on continuous, highly automated production lines and seldom redesigns products; (3) according to type of institution, e.g., financial, governmental, religious, educational, recreational; (4) according to degree of vertical integration with reference to primary, secondary, and tertiary operations; (5) according to degree of horizontal integration with reference to diversity of goods and/or services produced, (6) according to major materials, e.g., rubber, metals, plastics, (7) according to major processes, e.g., mining, data processing, communication, casting, repair, (8) according to major products, e.g., automobiles, appliances, toys, missiles. These are only a few of the ways organizations that produce goods and services can be classified. One could easily devise several useful systems of classifying firms by location alone.

These and many other categorical systems, singly or in combination, are useful tools of analysis for the sundry purposes one might have in analyzing productive society. If one's purpose is general understanding, he will need to use categorical systems which have been established by specialists of many

APPENDIX S (cont'd)

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kinds. Some of the specialities which study productive society are: sociology, psychology, political science, economics, psychiatry, anthropology, philosophy, and theology. Each of these specialties has developed several or more methods of classifying segments of productive society. Most objects and events can be classified in several or more ways.

ARTIFICIALITY

A second characteristic of categorical systems is their artificiality. Categorical systems can be said to be artificial simply because they are man-made. It is difficult to identify dichotomies and other systems of discrete categories which occur in nature.[7] Dichotomies in particular have suffered severely at the hands of philosophers, e.g., John Dewey. Many theoreticians have submitted that one or another dualism is false. One of the most interesting attempts to win the point that categorical systems are artificial is an argument developed by Karl Pearson, prominent mathematician and early statistician. In developing formulae for the tetrachoric correlation coefficient, Pearson argued that many variables commonly thought to be dichotomous are actually continuous--even sex. He submitted that if one considers the totality of sex characteristics rather than simple physiological equipment--the physiological sex boundary has been crossed by a few individuals--one finds that most people display both masculine and feminine characteristics in nearly equal quantities, i.e., that most people fall near the midpoint of the composite sex variable, and further that only a few people are so extremely masculine or feminine that they fall several standard deviations from the midpoint. In other words, one finds that sex is a normally distributed variable.

MUTABILITY

A related and very significant characteristic of categorical systems is

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7. Many of the categorical systems used by statisticians consist of mutually exclusive and exhaustive categories. However, these are usually established by statisticians to facilitate investigation.

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their mutability. They do not always fit actual objects and events;[8] i.e., they are changeable. When, as is often the case, we are unable to classify certain things, we are forced to establish new categorical systems or to modify existing ones. For example, when we find it difficult to classify an object as either fruit or vegetable, we establish a "half and half" kind of category. We are often forced to recognize that our categorical systems do not suit natural occurences.[9]

For the most part, fundamental classification of the animal, vegetable, or mineral order are well suited. However, lower-level classifications nearly always require finer distinctions and are thus more difficult. If birds are feathered vertebrates, we have one thing, but if we add the characteristic "flying," we make modifications to accomodate grounded species such as ostriches. The wealth of controversy regarding classifications in biology (and many other disciplines) is evidence of the artificiality and inevitable fallability of categorical systems. When the variety of forms is great, it is difficult to establish division points which do not make classification of certain new-found or man-made forms difficult.

Classification above the animal, vegetable, mineral level is also often difficult. Some of mankind's most controversial issues are found in the discourse which deals with the nature of things. Whether ours is a world which was created by a supreme being or not, whether the universe was formed by explosive or other forces, whether the universe is an expanding one or not--these kinds of classifications and the kind which deal with the nature of things generally at the molecular and atomic levels, e.g., questions regarding the classification of particles in nuclei are very difficult. Generally accepted, well demonstrated categorical systems at these levels of understanding are few and very mutable.

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8. When categorical systems "fit" all objects and events, we will have exhausted the possibilities for intellectual growth, i.e., will have learned to categorize and integrate everything--an impossibility.

9. Because of their greater variability, man-made objects and events are often more difficult to classify than are natural objects and events.

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In several very similar ways, then, we perfect knowledge by modifying categorical systems. (a) We perfect knowledge when we arrange old ideas and constructs in new ways. (b) We perfect knowledge when we discover new phenomena, by modifying old categorical systems or devising totally new ones to accommodate the new material. (c) We perfect understanding when, having made many integrations between categories within a system, we no longer use that system. With prolonged use, we arrive at a point where the division points, the tools of analysis, are not necessary to the understanding of what we are analyzing. Of course, this situation is only temporary, new methods of analysis and new relationships cause us to examine what we "know" again and again.

IMPORTANCE

Perhaps the paramount characteristic of categorical systems is their importance. Categorical systems are important insofar as their relationship to the processes of thought and the development of intelligence is as direct and universal as it was described in the first section of this article. Secondly, they are important insofar as they give organization or structure to, and thus facilitate understanding of, bodies of knowledge. It is for this reason that we value the organization which Euclid gave to geometry.[10] Similarly we value what Newton and his followers did for physics, Einstein's more fundamental and larger structure (of which Newtonian physics was just a part), and organizations in which Einstein's ideas share a similar relationship.

The search for larger and more meaningful systems of categorizing what we already know about the world and the results of contemporary investigations is of primary concern to scholars, creative artists, and theoreticians of all kinds. The search for sets of common denominators, i.e., logical categorical systems which give meaning to all that is known and all that is presently being discovered about kinds of phenomena, is very important.

CONTENT ORGANIZATION

The foregoing suggests no specific procedures for organizing and presenting units of content. How to sequence elements in given classroom or laboratory

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10. The existence of non-Euclidian geometries supports the idea that there are multiplicities of categorical systems.

experiences has not been the concern of this article. However, several closely related, general implications for content organization are evident.

VARIOUS ORGANIZATIONS

It follows from what has been said that the content of instruction cannot always be structured as it appears in organized disciplines. For general education purposes, content must be organized in several ways. Much of what is taught in schools, e.g., arithmetic and reading, does not come from organized disciplines. In the secondary school, it is obvious that units of content of sufficient size and duration cannot be presented from each of the specialties and/or disciplines with which youngsters should become familiar. Unless their understanding of the world, and of specialties themselves, is to be limited to a few fields, high school students cannot always study specialties and organized bodies of knowledge in the fashion people who hope to work in the respective fields study them. Purpose and time limitations suggest that so long as education is general, some content must be organized differently.

The nature of methods of organization has been of major concern to educationists. Renewed attempts should be made to resolve issues raised by the advocates of core, broad fields, activity, experience, social process, and life function approaches to content organization. Perhaps one day, the better of these methods will themselves fit into a larger and more generally applicable method of organizing content for general education purposes.

For purposes which are utilitarian in emphasis, much of the content should be organized as it is organized in the discipline or field for which the students are preparing.[11] (In many specialties, students must become familiar with the several ways prominent theoreticians organize the discipline.) Because all schools are somewhat alien to the working world, content organization in utilitarian education will depend upon pedagogical and administrative decisions and may thus differ from content as it exists in the discipline itself. However, unless these differences can be understandable and small, the preparation of specialists will be nominally effective.

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11. Except for the preparation of teachers, educationists have no special abilities to organize major units of content for preparing physicians, mechanics, or specialists of any kind. Pedagogues can assist people who organize content in utilitarian education, but decisions regarding the sequencing of large units of content are by definition the domain of specialists.

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STUDENT AWARENESS

It follows also that regardless of their purposes, students should be told why the content presented to them has been organized in a certain way and should furthermore be shown how it could be organized in other ways for immediate or future purposes. Students should learn the structure of the large and small units of content they are learning as Bruner, Asusbel and Herbart have suggested. This procedure expedites learning of a given body of content. When the procedure is extended, when students are shown other ways the material could be organized, broadened viewpoints, extensions, and related understandings in many dimensions are facilitated.

An example may clarify what is meant here. Suppose that the desire to develop a given understanding and certain practical limitations suggest that some content from economics, psychology and sociology should be presented. If the material is organized as it is found in sociology and what is said about the same issues in economics and psychology is tacked on, so to speak, students should be shown how the material might have appeared if economics or psychology had been used as the major thread and if material from other fields had been introduced.[12] The warp and woof of the cloth should always be made meaningful, and related materials that have been excluded because of time and other practical considerations should be made known to students to assure that learning can be continuous, i.e., that future learning is not restricted because of limitations placed on present learning. If people are not fully informed about the organization of what they learn in school, they get mistaken ideas, such as the attitude that they know all there is to know. Students should know where the material they are learning comes from, how it is valued by experts in fields that study similar phenomena, how it may fare in light of contemporary developments, etc. Textbooks and teachers should not give youngsters interpretations which are over-simplified or finalized in any way.

CONTROVERSIAL ISSUES

If the school accepts responsibility for making students aware of the many

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12. Perhaps as operations research, an approach whereby groups of experts from several or many specialties attack industrial problems, becomes more widespread in industry and elsewhere, more effort should be devoted to making the combined efforts of specialists meaningful to children and youth.

APPENDIX S (cont'd)

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ways men examine and describe the world around us, it must teach viewpoints regarding controversial issues. To say that youngsters should become familiar with the work of many fields, with the many ways in which knowledge is organized, with a great many ideas related in many ways, is to say that they should examine a great many viewpoints regarding a great many things. If education is to be general and liberalizing, if simplification and finality are to be avoided, youngsters must examine major positions on each of many critical issues. Insofar as controversies exist, youngsters must learn how to evaluate persuasive materials to function effectively in vocational and avocational pursuits in an industrial democracy. If we do not permit new generations to evaluate ideas--even our most basic assumptions regarding the nature of things and institutions--we indicate mistrust in basic precepts of democracy such as respect for individual intelligence. Education which would challenge, excite, and stimulate ideas rather than indoctrinate, stagnate, and depress minds must at one maturity level or another treat controversial issues to assure increasing maturity and continued intellectual development.

MODES OF THOUGHT

If the content of education is to improve individual intellectual facility, it follows that it should be organized and presented in ways which foster understanding of modes of thought. If youngsters are to understand the several ways sundry specialists examine phenomena, they must study the methods of various sciences. Put it another way, students should learn to categorize and integrate modes of investigation and thought. If youngsters are to understand methods of investigation which are peculiar to individual sciences, it behooves educators to organize and present materials which make the major proposals regarding how we think meaningful. The major proposals regarding fundamental modes of thought which have been presented by philosophers, logicians, physiologists, etc., should be made intelligible to secondary school students so that they may categorize and integrate specific modes of examination themselves. If intellectual development depends upon evaluation and appropriate utilization of the tools of thought, adolescents and adults should confront the best available descriptions of those tools.

Educators should not attempt to settle the controversy regarding how we think and then organize and present materials in fashions compatible with the mode of thought, such procedures are beyond the capabilities of educational theorists and educational psychologists. This controversy should be treated just as other controversies should be. Youngsters in school should be exposed

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to the best viewpoints regarding how we think so that the quality and quantity of categorizations and integrations they may make is not limited by wrong analyses of the act of thought which educators might make.

CONCLUSION

Intelligence, categorical systems, and content organization are closely related. Insofar as the content of instruction creates awareness and understanding of multiplicities of important, mutable, and artificial categorical systems (including analyses of controversial issues such as how we think), intelligence will be maximized.

APPENDIX T

OCCUPATIONAL ANALYSIS SHEET
(Brief Form)

I. Occupation _____

II. Representative List of Tasks:

1.

2.

3.

4.

5.

III. Performance Steps and Technical Information Topics
Task: # -

Performance Steps	Technical Information Topics
1.	1.
2.	2.
3.	3.
4.	4.
5.	
6.	

IV. Performance Step Details
Task: # -

Performance Step: # -

1.

2.

3.

4.

5.

6.

APPENDIX U

AN OCCUPATIONAL ANALYSIS
FOR THE OCCUPATION OF
DENTAL LABORATORY TECHNICIAN

FOR DR. RICHARD F. BORTZ

by
Joseph L. Rupp Jr.

12 August 1970

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B. Statement of General Duties

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2. Educational Background (formal)
3. Pre-Entry Occupational Preparation and/or Training

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APPENDIX U (cont'd)

Occupational Description and Worker Profile

For the Occupation of Dental Technician

I. Occupational Description

A. Purpose of the Occupation:

Working as a team, the Dentist and the Dental Technician strive to restore the oral cavities of their patients to excellent condition.

B. Statement of General Duties[1]:

Constructs and repairs dental appliances, according to DENTIST'S prescriptions: Fabricates full and partial dentures, using wax and plaster models, surveyors, tooth-color scales, articulators, and electric grinders and polishers. Constructs crowns, inlays, and wire frames by forming (bending and soldering) gold and platinum wire, or casting in mold in centrifugal casting furnace. Constructs porcelain teeth from impression, using powdered porcelain and water, electric furnaces, grinding wheels, and tooth-color scales. Polishes metal and plastic portions of completed appliances with electric grinders and polishers and tests them for occlusal harmony, using articulator.

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[1]U. S. Department of Labor, Dictionary of Occupational Titles, Third Edition, (Washington, D.C., U.S. Government Printing Office, 1965), Volumes I and II.

APPENDIX U (cont'd)

II. Worker Profile

A. Pre-Entry Occupational Abilities and Preparation

1. Worker Requirements (personal characteristics)[2]:

An occupationally significant combination of ability to learn and apply craft techniques, processes and principles; ability to use independent judgement in planning sequence of operations and in selecting proper tools and materials; ability to assume responsibility for attainment of prescribed qualitative standards; ability to apply shop mathematics to practical problems, such as computing dimensions and locating reference points from specifications data when laying out work; spatial perception to visualize arrangement and relationships of static or moving parts and assemblies represented in blue prints and diagrams; form perception as required in such activities as inspecting finished work to verify acceptability of surface finish; and some conbination of finger and manual dexterity and eye-hand coordination to use tools and manually controlled power tools when executing work to close tolerances.

2. Educational Background (formal)[3]:

Apprenticeships providing 2-6 years of on the job training and trade instruction are generally accepted as the best methods

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[2] Ibid.

[3] Ibid.

APPENDIX U (cont'd)

of entry into craft work. Many firms have established OJT programs in which entry workers are placed under the supervision of a journeyman or a foreman and are advanced from elementary tasks to progressively more difficult work as they demonstrate increased proficiency in the skills of the craft.

3. Pre-Entry Occupational Preparation and/or Training:

Training received in vocational, trade, or technical schools or the armed forces enhance entry and advancement prospects, and may shorten training periods in some crafts.

B. Post-Entry Occupational Conditions[4]:

1. Types of Responsibility:

Craftsmen who become thoroughly familiar with all aspects of their trade through apprenticeship training generally stand the best chance for advancement to supervisory positions.

2. Work Environment:

Generally indoors, but travel is involved occasionally.

3. Occupational Hazards:

Eye damage and lung infection due to small particles flying.

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[4] Ibid.

APPENDIX U (cont'd)

TASK LISTING SHEET*

Occupation: Dental Laboratory Technician

	Tasks	Frequency of Performance	Importance	Complexity
	Category I Complete Denture Technician			
1.	Constructs Baseplates	1	2	2
2.	Constructs Occlusion Rims	1	2	3
3.	Insert Gothic Arch Tracers	1	1	1
4.	Articulate Master Casts	1	1	3
5.	Arrange Artificial Teeth in Occlusion Rims	1	1	1
6.	Balance the Occlusion	1	1	1
7.	Wax-up Denture	1	2	1
8.	Invest Denture in Flask	1	2	3
9.	Eliminates Wax from the Mold	1	2	1
10.	Create a Postdam	1	2	1
11.	Place a Palatal Relief	1	2	1
12.	Mixes Acrylic Resin	1	2	2
13.	Packs and Cures Dentures	1	2	3
14.	Deflasks Dentures	1	1	2
15.	Finishes and Polished Dentures	1	1	2
	Category II Removable Partial Denture Technician			
16.	Surveys and Designs Partial Dentures	4	1	1
17.	Blocks and Relieves Master Casts	4	1	1
18.	Duplicates Master Casts	4	1	3

*Mager, Developing Vocational Instruction

APPENDIX U (cont'd)

TASK LISTING SHEET*

Occupation: Dental Laboratory Technician

	Tasks	Frequency of Performance	Importance	Complexity
19.	Waxes Frameworks	1	2	1
20.	Sprues Wax Patterns	1	2	1
21.	Invests Wax Patterns	1	2	2
22.	Burnsout and Casts Frameworks	1	1	2
23.	Finishes and Polishes Framework	1	1	1
	Category III Fixed Partial Denture Technician			
24.	Constructs Working Dies	4	1	3
25.	Waxes Restoration	1	2	1
26.	Sprues Wax Patterns	1	2	1
27.	Invests Wax Patterns	1	2	2
28.	Burnout and Cast Restorations	1	2	2
29.	Finishes and Polishes Restorations	1	2	1
	Category IV Dental Ceramist			
30.	Constructs Metal Frameworks for Porcelain to Metal Restorations	4	1	2
31.	Prepares Frameworks to Receive Porcelain	4	1	1
32.	Opaques Frameworks	1	1	2
33.	Builds Up Porcelain Restoration	1	2	1
34.	Fires Porcelain Restoration for the first time	1	2	1
35.	Adjusts Porcelain After First Firing	1	2	2

*Mager, Developing Vocational Instruction

APPENDIX U (cont'd)

TASK LISTING SHEET*

Occupation: Dental Laboratory Technician

	Tasks	Frequency of Performance	Importance	Complexity
36.	Contours Restorations to Dimensions	1	2	2
37.	Finishes and Polishes Restorations	1	2	1
	Category V Miscellaneous Tasks			
38.	Picks Up and Delivers Cases	1	2	1
39.	Pours Impressions	1	2	1
40.	Constructs Individual Impression Trays	4	2	1
41.	Orders Supplies	4	2	1
42.	Maintains Accounts	3	2	1
43.	Performs Public Relations Duties	4	1	1
44.	Calibrates Electric Furnaces	4	2	1
45.	Maintains and Cleans Work Areas	1	2	1

Key To Numerical Code:

Frequency of Performance
1. Daily
2. Weekly
3. Monthly
4. When Necessary

Importance
1. Very Important
2. Important

Complexity
1. Moderately Complex
2. Complex
3. Very Complex

NOTE:

This information was compiled on the basis of a large laboratory doing all types of prosthesis in large quantities; a smaller laboratory would be obliged to modify the "frequency" of some procedures, depending upon what their speciality is or base it upon the demand in their locale.

*Mager, Developing Vocational Instruction

APPENDIX U (cont'd)

TASK DETAILING SHEET*

Occupation: Dental Laboratory Technician

Category of Task: #4 - Dental Ceramist

Task: #33 - Builds Up Porcelain Restoration

No.	Performance Sequence	Type of Performance	Related Information Technical
1.	Select the Porcelain Powder	Discrimination	1. Color Blending
2.	Mix the Proper Shade	Manipulation	
3.	Blend Powder with Distilled Water	Manipulation	2. Effects of Moisture on the Restoration
4.	Build Coronal Portion of the Restoration	Manipulation	
5.	Condense Each Application of Porcelain	Manipulation	
6.	Overbuild to Compensate for Shrinkage	Discrimination	
7.	Carve Tooth Forms into Porcelain	Manipulation	

*Mager, Developing Vocational Instruction

APPENDIX U (cont'd)

TASK OBJECTIVE SHEET

I. Occupation: Dental Laboratory Technician

II. Category of Task: #4 - Dental Ceramist

III. Task Number and Title: #33 - Build Up Porcelain Restoration

IV. Performance Conditions:

The working area is an enclosed controlled atmosphere, as dust free as possible. Equipment and materials needed are the same as for opaquing.

V. Statement of Terminal Behavior:

The student will build up porcelain restorations.

VI. Evaluation Criteria:

The student must mix and handle the porcelain in accordance with the manufacturers instructions but the contour of the restoration must be in harmony with the surrounding teeth and match the occlusion of the teeth in the arch.

APPENDIX U (cont'd)

STEP DETAILING SHEET

Occupation: Dental Laboratory Technician

Category of Task: #4 - Dental Ceramist

Task Number and Title: #33 - Build Up Porcelain Restoration

Performance Step Number and Title: #7 - Carve Tooth Forms into Porcelain

Performance Conditions:

1. Well ventilated room
2. Manufacturers instructions
3. Surgical mask
4. Distilled water
5. 12" tongs
6. Saggar trays
7. Curved hemostats
8. Carving instruments
9. Porcelain brushes
10. Porcelain furnace

Performance Step Details:

1. Condense porcelain well
2. Establish central sulcus
3. Carve inclined planes
4. Establish triangular ridges
5. Form facial contour
6. Form lingual contour
7. Form interproximal spaces

Criteria For Performance Step Evaluation:

The contour of the restoration must be in harmony with the surrounding teeth and in occlusion with the opposing teeth.

APPENDIX U (cont'd)

Related Information Topics - General

1. History of Dentistry
2. History of the Dental Laboratory
3. Evolution of Complete Dentures
4. Evolution of Partial Dentures
5. Evolution of Crown and Bridges
6. History of Metal Casting
7. Evolution of Dental Ceramics
8. Development of Dental Acrylics
9. Development of Chrome-Cobalt Alloys
10. Development of Platinum - Paladium - Gold Alloys
11. Jewelry Designing

APPENDIX U (cont'd)

Related Information Topics - In-Service Occupations

1. Occupational Requirements
2. Career Opportunities
3. Average Wage and Fringe Benefits
4. Retirement Benefits
5. Educational Advancement Programs
6. Environmental Conditions
7. Insurance Coverage
8. Resume Writing Techniques
9. Physical Requirements
10. Mental Requirements
11. Size of Operation
12. Labor Union Movements
13. Certification Program

APPENDIX V

DEFINITION OF A BEHAVIORAL OBJECTIVE

A behavioral objective is a written statement which includes:

1) The TITLE, an abbreviated sentence or phrase which is descriptive and contains an action verb,
2) A statement which describes the PERFORMANCE CONDITIONS under which this behavior will occur,
3) A statement (written in the future tense) of overt, TERMINAL BEHAVIOR, and
4) A statement which describes the EVALUATION CRITERIA used in the evaluation of the statement of terminal behavior.

APPENDIX W

Course of Study - Dental Hygienist
(Modified Form)

JOB DESCRIPTION

DENTAL HYGIENIST (medical ser.) 078.368 oral hygienist; prophylactician. Performs dental prophylactic treatments and instructs groups and individuals in the care of teeth and mouth: Removes calcareous deposits, accretions, and stains from teeth by scraping accumulation of tartar from teeth and beneath margins of gums, by using rotating brush, rubber cup, and cleaning compound, and by other methods. Works finishing strip around and between teeth to remove stains inaccessible by other methods. Swabs gums with medication after cleaning teeth. Charts conditions of decay and disease for diagnosis and treatment by Dentist. Lectures community organizations and other interested groups regarding oral hygiene, using motion pictures, charts, and other visual aides. May expose and develop X-ray film, apply medicaments to aide in arresting dental decay, prepare filling material, and sterilize instruments.

U.S. Department of Labor. Manpower Administration. Dictionary of Occupational Titles: Vol. 1, Definitions of Titles, 3rd Ed. (Washington D.C.: Government Printing Office, 1965) p. 193.

APPENDIX W (cont'd)

MAJOR UNITS OF INSTRUCTION

UNIT I. PREPARING AND STERILIZING X-RAY EQUIPMENT AND SUPPLIES

UNIT II. PROCESSING X-RAY FILM

UNIT III. EXPOSING INTRA-ORAL FILMS

APPENDIX W (cont'd)

UNIT I. PREPARING AND STERILIZING X-RAY EQUIPMENT AND SUPPLIES

A. BEHAVIORAL OBJECTIVES

1. Performance Objective Title: Identify x-ray equipment and supplies.
   Performance Conditions: During normal classroom conditions,
   Terminal Behavior: The student will identify the x-ray equipment and supplies.
   Success Criteria: Correctly identify all x-ray equipment and supplies discussed in a classroom demonstration.

2. Performance Objective Title: Clean and sterilize x-ray equipment and cubicle.
   Performance Conditions: Simulated standard x-ray cubicle with chair and x-ray tube,
   Terminal Behavior: The student will clean and sterilize x-ray equipment and cubicle.
   Success Criteria: The x-ray cubicle must be free from dust and dirt and disinfected to the instructor's satisfaction.

3. Performance Objective Title: Order and replenish x-ray supplies.
   Performance Conditions: Given the amount of supplies used under normal conditions, in one week's operation and a standard inventory sheet and reorder blank,
   Terminal Behavior: The student will order and replenish x-ray supplies.
   Success Criteria: Inventory sheets and reorder blanks will be checked for accuracy by the instructor.

4. Performance Objective Title: Prepare x-ray equipment for exposing bitewing and periapical films.
   Performance Conditions: Given the necessary space supplied with films, chair, and x-ray machine in proper functioning order,
   Terminal Behavior: The student will prepare the x-ray equipment for exposing bitewing and periapical films.
   Success Criteria: All equipment and supplies will be checked by the instructor to determine its readiness for operation.

B. CONTENT OUTLINE

Technical Information

1. X-ray tube and related parts
2. Film sizes and types
3. Cleaning and sterilizing techniques

APPENDIX W (cont'd)

4. Preparation of x-ray equipment for operation

5. Ordering and replenishing x-ray supplies

General Information

6. Simplified theory of x-ray production

7. History of radiology

8. Types of radiation

9. Properties of x-rays

In-Service Occupational Information

10. Companies which supply x-ray equipment

11. State laws concerning standards of equipment

C. SKILLS TO BE DEVELOPED

1. Sterilizing x-ray equipment (2)

2. Identification and familiarity with x-ray equipment and related parts (1)

3. Replenishing supplies (4)

4. Techniques for preparing x-ray equipment (5)

5. Techniques for preparing x-rays for exposure (5)

D. SHOP AND LAB ACTIVITIES

1. X-ray equipment familiarization (1)

2. Sterilizing x-ray equipment (2)

3. Ordering supplies (4)

4. Preparing films for bitewing x-rays (5)

5. Preparing films for full-mouth x-rays (5)

APPENDIX W (cont'd)

E. GLOSSARY OF TERMS

1. Anode (1)
2. Cathode (2)
3. Radiology (1)
4. Roentgenology (1)
5. Roentgen rays (1)
6. Electric current (1)
7. Roentgenogram (1)
8. Electron (1)
9. Ion (1)
10. Direct current (1)
11. Alternating current (1)
12. Ampere (1)
13. Milliampere (1)
14. Volt (1)
15. Kilovolt (1)
16. Watt (1)
17. Kilowatt (1)
18. Ohm (1)
19. Transformer (1)
20. Autotransformer (1)
21. Soft radiation (1)
22. Hard radiation (1)
23. Primary radiation (1)
24. Secondary radiation (1)

APPENDIX W (cont'd)

25. Leakage radiation (1)

26. Scattered radiation (1)

27. Stray radiation (1)

28. X-ray tube head support (1)

29. Focal spot (1)

30. Filter (1)

31. Inherent filter (1)

32. Added filter (1)

33. Total filtration (1)

34. Collimeter (1)

35. Zepherin (2)

36. Alcohol (2)

37. Periapical film (1), (3), (4)

38. Bitewing film (1), (3), (4)

39. Bitewing tabs (1), (3), (4)

40. Standard film (1), (3), (4)

41. Ultra-speed film (1), (3), (4)

42. Adult film (1), (3), (4)

43. Pedo film (1), (3), (4)

F. INSTRUCTIONAL MEDIA

1. Lectures with the use of the overhead projector and transparencies, and the blackboard:

   a. "X-ray Production" (1)

   b. "History of Radiology" (1)

   c. "Types of Radiation" (1)

APPENDIX W (cont'd)

d. "Properties of X-rays" (1)

e. "Cleaning and Sterilizing X-ray Equipment" (2)

f. "Maintaining Supply Inventory" (4)

g. "Preparing X-ray Equipment for Operation" (5)

2. Demonstration with equipment:

a. "How to Clean and Sterilize X-ray Equipment" (2)

b. "X-ray Tube and Related Parts" (1)

c. "Preparing X-ray Equipment for Operation" (5)

d. "Film Sizes and Types" (5)

3. Practice and evaluation of method:

The students will practice identifying equipment, cleaning and sterilizing equipment, ordering and replenishing supplies, and preparation of the equipment for use. After practicing these techniques, the students will be evaluated by the instructor.

G. EVALUATION

1. Identification tests

2. Bi-weekly tests on content areas

3. Simulated conditions tests evaluated by performance and checklists.

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APPENDIX X

UNIT OF STUDY FORMAT

UNIT I - NAME OF UNIT

A. BEHAVIORAL OBJECTIVES

Performance Objectives Title:
Performance Conditions:
Terminal Behavior:
Success Criteria:

B. CONTENT OUTLINE

1. Technical Information
2. General Information
3. In-Service Occupational Information

C. SKILLS TO BE DEVELOPED

D. LABORATORY ACTIVITIES

E. GLOSSARY OF TERMS (With Definitions)

F. INSTRUCTIONAL MEDIA

G. EVALUATION

H. BIBLIOGRAPHY

APPENDIX Y

UNIT LEARNING MODULE - #

Course: # -

Unit of Study: # -

Learning Objective

Title:

Performance Conditions:

Terminal Behavior:

Evaluation Criteria:

Type of Performance
Disrm._____
Recall_____
Manip._____
Speech_____
Prb. Sol.__
Est. Time

Learning Activities and Resources

APPENDIX Z

Course: # 1 - Health Occupations

Unit of Study: # 2 - Vital Signs

Learning Objectives

Title: Temperature, Pulse and Respiration

Type of Performance

Disrm. XX
Recall ____
Manip. X
Speech ____
Prb. Sol. __

Performance Conditions: In the clinic and given a thermometer (Fahrenheit), stethoscope, watch with sweep second hand, pencil and clipboard, doctors orders, necessary recording charts, a patient and under supervision.

Terminal Behavior: The student will take temperature, pulse, and respiration of the patient.

Est. Time

5 Hours

Evaluation Criteria:

1. The reading of the patient's temperature must coincide with that of the supervisor's
2. The pulse rate, as determined by the student, will be within plus or minus one beats per minute as noted by the instructor
3. The patient is consuming a minimum of 15 ml of oxygen per minute

Learning Activities and Resources

1. Read pages 111-143, The Science of Nursing, Nightengale.
2. Develop "temperature, pulse, respiration relationship curves".
3. Observe TPR demonstration.
4. Practice on partner in classroom (supervised).
5. Practice on mannequin in lab (supervised).
6. Complete practical examination on actual patient (unsupervised).

APPENDIX AA

GLOSSARY OF TERMS

Terms Associated With Occupational Analysis

Anasynthesis - The total act of separation of the whole into its elements and the recombining, most often into a new organizational pattern, of elements or parts into a complex whole.

Category - The first in the series of three occupational group arrangements of titles and codes as classified in the Dictionary of Occupational Titles.

Category of Tasks - Groupings of tasks according to common or similar characteristics. One method used for organizing tasks in the conduct of an occupational analysis.

Caution - A written statement used in a lesson sheet to warn the reader of a dangerous step to be performed.

Complexity Rating - The quantitative measure of complexity of a task. It is obtained by multiplying the total number of performance steps of a given task by the total number of technical information topics of that task. Example: No. of Performance Steps X No. of Technical Information Topics = Complexity of the task. One factor on the "Task Listing Sheet".

Dictionary of Occupational Titles - A two-volume set of books in which approximately 35,550 occupations are defined and classified into occupational categories, divisions and groupings.

Division - The second in the series of three occupational group arrangements of titles and codes as classified in the Dictionary of Occupational Titles.

Frequency of Performance - A relative measure of the frequency of performance of a selected task of an occupation with regard to the frequency that each of the other tasks of that occupation are performed. The measure may either be qualitative or quantitative. One factor on the "Task Listing Sheet".

General Duties - A narrative statement listing the activities generally associated with a given occupation. A description of those things that a person does in the occupation being described.

APPENDIX AA (cont'd)

GLOSSARY OF TERMS

General Occupational Information - The information which broadens the worker's occupational scope, but which is not necessary for nor directly affects his occupational performance.

Group - The third and last in the series of three occupational group arrangements of titles and codes as classified in the Dictionary of Occupational Titles.

Importance - A relative measure of the importance of a selected task of an occupation with regard to the importance of each of the other tasks of that occupation. The measure may either be qualitative or quantitative in nature. Most often it is directly related to the measure of frequency of performance. One factor on the "Task Listing Sheet".

In-Service Occupational Information - The information which allows the worker greater insight into the trends, wage and fringe benefits, occupational hazards, health-care programs, etc. of the occupation in which he is employed or in which he will be employed.

Levels of Activity - The term used to indicate the levels of specificity of the activities which occur in an occupational analysis. The four levels are: 1) Occupation, 2) Task, 3) Performance Step and 4) Step Detail.

Note - A written statement used in a lesson sheet to draw the reader's special attention to a given point.

Occupation - One's habitual employment; business, trade or calling. That activity to which one regularly devotes himself, his regular work or means of earning a living. The means one uses to earn his livelihood.

Occupational Analysis - The primary activity of identifying and categorizing a given occupation into its subsequent tasks, performance steps, step details (joint units) and items of related technical, general occupational, and in-service occupational information. Included also is the secondary activity of converting the identified tasks of the occupation into behaviorally-oriented learning experiences.

Performance Step - The third level of activity in a completed ocupational analysis. The individual steps performed in the completion of a given task. Comprised of step details (elemental forms of occupational activity). Contains an action verb and a specific description of the activity being performed.

APPENDIX AA (cont'd)

GLOSSARY OF TERMS

Performance Step Sequence - The sequence of steps performed in completing a given task. One factor on the "Task Detailing Sheet".

Purpose - A statement of justification; the response to the question "Why does it exist"? The essence of existance. One of three factors of an instructional system.

Related Information - The term used to collectively refer to the three types of occupational information, e.g. "Technical Information", "General Occupational Information", and "In-Service Occupational Information".

Step Detail - The fourth level of activity in a completed occupational analysis. The elemental forms of occupational activity. The individual steps performed in the completion of a given performance step. Contains an action verb and a specific description of the activity being performed.

Step Detailing Sheet - The third of three activites analysis sheets used in the completion of an occupational analysis. Its purpose is to assist the analyst in listing the individual step details of a given performance step. Categories included on the sheet are: 1) Occupation, 2) Category of Tasks, 3) Task Number and Title, 4) Performance Step Number and Title, 5) Performance Conditions, 6) Performance Step Details and, 7) Criteria For Performance Step Evaluation, Abbreviation "SDS".

Task - The second level of activity in a completed occupational analysis. A completed unit, a logical and completed "product" of man's effort; an accumulation of performance steps ending in a finished act. A "vehicle of instruction" for teaching purposes. Comprised of performance steps. Contains an action verb and a specific description of the activity (task) being performed.

Task Detailing Sheet - The second of three activities analysis sheets used in the completion of an occupational analysis. Its purpose is to assist the analyst in listing the individual performance steps of a given task. Categories included on the sheet are: 1) Occupation, 2) Category of Tasks, 3) Task Number and Title, 4) Item Number, 5) Performance Sequence, 6) Type of Performance, and 7) Technical Information. Abbreviation "TDS".

APPENDIX AA (cont'd)

GLOSSARY OF TERMS

Task Listing Sheet - The first of three activities analysis sheets used in the completion of an occupational analysis. Its purpose is to assist the analyst in listing the individual tasks of a given occupation. Categories included on the sheet are: 1) Occupation, 2) Item Number, 3) Category of tasks (spaces), 4) Frequency of Performance, 5) Importance, and 6) Complexity Rating. Abbreviation "TLS".

Task Objective Sheet - The sheet used by the analyst to convert the tasks of a given occupation into behaviorally-stated learning objectives. Categories included on the sheet are: 1) Occupation, 2) Category of Tasks, 3) Task Number and Title, 4) Performance Conditions, 5) Statement of Terminal Behavior, and 6) Evaluation Criteria. Abbreviation "TOS".

Technical Information - The information which the worker must possess to perform satisfactorily in the occupation. One factor on the "Task Detailing Sheet".

Type of Performance - Refers to any one of several types of performance exhibited by a worker at the performance step level of activity. The number of types of performance (human behavior) varies depending on the author. One factor on the "Task Detailing Sheet".

World of Human Behavior - The major behavioral category (Supra-system II) containing all elements of human behavior past, present and future.

World of Occupational Behavior - The second behavioral category (Supra-system I) containing all elements of occupational behavior past, present, and future.

APPENDIX BB

GLOSSARY OF TERMS

Terms Associated With Instructional Technology

Achievement Test - A test designed to estimate the amount of learning by each student, generally in comparison to other students, by sampling the content of the relevant instruction.

Adjunctive Program - A program which makes use of existing materials as its primary source of instruction, around which a programmed guide (objectives, questions, etc.) is built to guide the student through the information.

Affective Objective - An objective dealing with emotions or feelings indicated by works such as interest, appreciation, enthusiasm, motivation, and attitudes.

Behavior - What a person does, including observable body movements (walking, pointing, speaking, smiling) and unobservable acts (thinking, feeling.)

Behavioral Blueprint - The three components -- S-R table, objectives, and criterion test items -- which specify the desired results of instruction and provide the primary goal for instructional design.

By-Passing - A method which permits a trainee to skip certain parts of the instructional material because of prior performance capability.

Chain - A sequence of stimulus-response units in which each response acts as or produces the stimulus for the next response.

Cognitive Objective - An objective which deals with the thought processes (knowledge, understanding) rather than with the affective or psychomotor behaviors.

Confirmation - A form of feedback to a student telling him whether or not his responses are appropriate and what progress he is making.

Content Analysis - Identification of relevant instructional objectives by analyzing reference materials, existing instructional materials, and curriculum design materials.

Course Performance Requirements - Terminal performance stated in terms of what the student must do, under what circumstances, and with what degree of accuracy.

APPENDIX BB (cont'd)

Covert Performance (Response) - Behavior that is not necessarily visible (e.g., thinking, solving, discriminating).

Criterion Performance - Terminal behavior which represents achievement of the course objectives.

Criterion Test - An examination used to evaluate the attainment of each instructional objective and to validate the course.

Criterion Test Item - A written and/or actual performance item which is used to measure the achievement of an objective.

Developmental Testing - Part of the validation process in which the instructional material is successively tested and revised to identify and correct weaknesses in the material. Revisions are made after each test until the instructor's standard is achieved.

Discrimination Objective - An instructional objective involving the ability to respond to differences among stimuli.

Effective Instruction - Instruction which is successful in producing the intended result. Effective instruction may, however, be inefficient, and care must be taken to build both effectiveness and efficiency into an instructional system.

Efficient Instruction - Instruction which produces effective results with the minimum possible expenditure of time, effort, or resources.

Exposure Content - Content that is included because it is assumed to add interest value, or to have other communication, emotional, or instructional values, but which is not essential in helping the student attain the terminal performance criterion.

Entry Level Performance (ELP) - The level of performance the student brings with him that is relevant to the terminal performance requirements (TPR). Instruction must bridge the gap between TLP and JPR.

External Mediator - A source of information to which a person can refer for identification of the S-R units that make up a required task; external prompts.

Field Testing - A late stage in the validation process, following developmental testing, which involves testing the instruction on a relatively large group of students and under field conditions.

Gain Score - The difference between the pre-test and post-test scores.

Generic Objective (or an objective with content generality) - An objective which requires generalization across a wide-range of different examples of the same principle, therefore requiring more than one criterion test item in order to test adequately for generalization.

APPENDIX BB (cont'd)

Instruction - A series of procedures and events designed to produce learning of specified and measurable objectives.

Instructional Objectives - Description of the form of the behavior that instruction is to produce, stated in terms of what the student is to be able to do (explain, describe, discuss, solve, manipulate, etc.), the conditions requiring the action (question, problem, task, situation), and, where appropriate, a standard of accuracy or speed. In some cases the product of the students' actions rather than the actions themselves are described (e.g., an essay, typed page, object produced, setting on a gauge, etc.) the desired characteristics of the product defining what the student is to do. The behavior described, or its consequence, is observable and measureable.

Instructional Technology - A set of principles and procedures used to analyze instruction, design instruction, instruct, and provide quality control. A systems approach to instruction. A developmental process that utilizes a variety of principles and techniques in order to develop instruction that achieves its objectives.

Interactive Instruction - Instruction in which the student is required to respond frequently to the instruction. In a tutorial setting there is a continuous exchange of information between tutor and student. Programmed presentations of various kinds require the student to respond, and the feedback information is used during validation. Following validation the presentations generally continue to require responses by the students as part of the instruction: the presentations sometimes adapt to the student responses, but are sometimes non-adaptive, unaffective by the kinds of responses made by the students.

Interim or Enroute Objectives - Temporary performance which aids the student in attaining the terminal performance requirement, but which is usually dropped after terminal criterion is reached.

Internal Mediator - Internal prompting, covert responding that prompts required responses or response chains.

Job Aid - A flow chart, checklist, a listing of steps to be followed by a person doing a job, telling him how to do it. An external mediator used on the job.

Mediator - Prompts which may be provided by the trainee (telling himself what or how) or by external materials, events, or individuals, which enable the trainee to proceed from the initiating stimulus to the final required response.

Modified Gain Score (G) - The ratio of the actual gain to the maximum possible gain.

$$\underline{G} = \frac{\text{Post} - \text{Pre}}{\text{Total Possible} - \text{Pre}}$$

APPENDIX BB (cont'd)

Motor Performance Objectives - A statement specifying performance involving physical movement, acting on some part of the environment (sometimes referred to as psychomotor skills).

Observational Task Analysis - Identification of S-R units by observing a person actually performing the task.

Overt Performance (Response) - Visible behavior (e.g., sutible or observable) which is measurable.

Performance (Change) - A change in student behavior capability from the beginning of instruction to the end of instruction; a modification of a student's performance capability.

Prompting Stimulus - A stimulus other than the key stimulus, used to aid the student practicing the correct response.

Quality Control - Evaluation of instruction in relation to measurable objectives, to ensure that the instructional results continue to match the instructional intent.

Remedial Instruction - Instruction in subjects or skills required by the entry level standards of a course, or by job performance standards, or by some other standard that a student does not meet.

Response - A unit of behavior that can be identified in terms of its relation to specific stimuli.

Simulated Task Analysis - Identification of stimulus-response units by imagining a task being performed.

Specific Objective - An objective in which no generalization is required since a limited, relatively unvarying response is made either to a relatively limited range of stimuli or to a single stimulus. (See General Objective).

Standard or Criterion - The part of an objective which specifies the speed, accuracy, or ability required for a terminal performance. Frequently implied rather than specified.

Stimulus - The event, situation, condition, signal, or cue to which a response must be made.

Subobjective - A specification of performance which is a part of a larger terminal objective.

Systems Approach - The specification of all events, processes, outputs, and other specifications of the sequential steps in a process, including feedback and other interrelationships between the components of the system. The feedback involved is information or other aspects of the various components which is used to modify activities of other components. The use of feedback to monitor the system is the identifying characteristic of any system.

APPENDIX BB (cont'd)

Task Analysis - Identification of stimulus-response units by inspection of verbal, discrimination, and motor performance.

Terminal Objective - End-of-course performance stated in behavioral terms. (Objectives)

Validation - The process of developmental testing, field testing, and revision of instruction to be certain that the instructional intent is achieved. It is possible the most significant advance in present-day instructional practice, since it allows instructional designers to guarantee specified results. It was a logical development with programmed instruction, since PI techniques permitted interactive instruction which produces a continuous record of student involvement. Since programs have objectives and a record of student responses, since the effectiveness of each step of each instructional presentation can be determined, and each step can be revised to correct deficiencies.

Validated Instruction - Instruction which has been shown to do what it was intended to do, to change performance capability according to the specifications included in the instructional objectives.

Verbal Background Objectives - Overt or covert verbal behavior which is not itself part of the terminal performance requirements, but which serves to prompt verbal or motor performance or discriminations; internal mediation, telling himself how or what to do.

Verbal Performance Objective - Overt or covert verbal behavior, using words, mathematical processes or other symbols, spoken or written. The verbal behavior itself is a part of the terminal performance requirements.